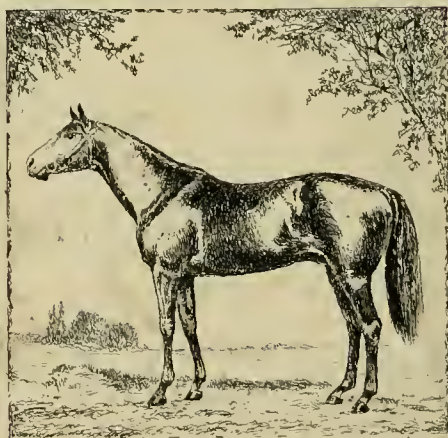
HORSE BREEDING

IN THEORY AND PRACTICE

B. Von OETTINGEN

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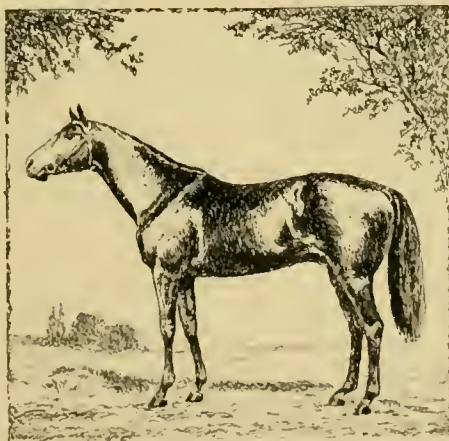
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BY

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ROYAL STUD OF TRAKEHNEN

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PREFACE.

THE wish has often been expressed that practical men should make known more generally their experiences in horse breeding, but in desiring this it is easy to lose sight of the fact, that when a practical man commences to write he at once steps out of the bounds of the practical.

Moreover, it has to be taken into consideration that practical experience is only gained by long years of labour, whilst mere theorists may write their works when even quite young and practically without experience, but being gifted with criticism, intellectual insight, and inspiration. I must also point out that my work at the Trakehnen Stud has kept me always so actively employed that, unfortunately, I have not been able to spare the necessary time to go thoroughly through the large mass of material which I have accumulated in the course of many years, and to treat same in as exhaustive a manner as an expert ought. In writing the last chapter on "The Establishment of Studs" my time was very limited indeed, and I have had to be satisfied with simply giving an outline.

The short historical sketch on the development of the Thoroughbred is the result of notes made from racing calendars and stud books, and the chapter on the alteration of weight differences is likewise the outcome of investigations made in the same quarter. It was only when I came to the conclusion, from the present work, that there seemed to be a deterioration in the Thoroughbred, commencing from about the middle of the nineteenth century, that I again went through the Racing Calendar, and Stud Book, in order to more closely investigate this apparent deterioration. In this way originated the chapter comparing the capabilities (Leistungsfähigkeit) of the Thoroughbred of to-day with that of an earlier period, and the deductions arising therefrom. The high regard which I have for the Thoroughbred has not stopped, but rather stimulated me to investigate and express candidly the ideas got from studying the present state of the Thoroughbred. I have taken nothing for granted. The results of these investigations have once again vindicated the nature of "Public Opinion" so well described by Ranke. It has a true sense of what is needed, but has not the slightest idea

of how to supply what is wanted. As to whether the means which I propose for improving the Thoroughbred will be efficacious or not it is indeed difficult to prophesy. Experience alone will prove this.

The chapter on "Inbreeding" is a modest attempt to come to a logical conclusion in this interesting, but as yet unexplored, region of thought. Without doubt the study of this question is in its veriest infancy. Up to the present time there has not been demonstrated the influence exerted by the bases of inbreeding, we do not yet know what is due to the own inbreeding of the base and what is due to its sex. Is it possible that the great prepotency of Melbourne, as shown in his female descendants, should be accounted for in the fact that the famous Termagant was the base of Melbourne's inbreeding? The computation of "Inbreeding" has entailed much labour, as unfortunately the necessary material has neither been collected nor published anywhere, and I know very well that in this difficult work many errors have crept in.

In the chapter on Heredity, as well as in the practical part on Horse Breeding, much has been left out, as I take it for granted that only breeders and lovers of horses will read this work, who already know and are well acquainted with the elementary laws of horse breeding and sport racing. Any man may make a mistake, and I claim this indulgence, but it has been my earnest endeavour to take from the practical what I have recognised as right in practice. I do not lay any claims to completeness as regards the whole principles of breeding, such as is claimed in several books on this subject, as writers of these latter are often led into the error of copying ridiculous blunders of other, often injudiciously chosen, writers, and in this way spread incorrect teachings in this as in other branches.

For a period of twelve years in Trakehnen the long winter evenings were shortened and brightened by these hippological studies, the results of which I give to the public in the present work, with the sincere hope that it will promote the love of that noble creature, the horse, its breeding, and trial on the race course.

BURCHARD VON OETTINGEN.

Trakehnen, October 1st, 1907.

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I.

Trial of the Thoroughbred on the Racecourse and its value in the breeding of Half-breds.

CHAPTER I.

Sources for tracing the development of the Thoroughbred and Race Trials in England.

THERE is no breed in the world which places at the disposal of the investigator such an abundant and authenticated mass of material for the examination of the various problems on breeding as does the English Thoroughbred, but, unfortunately, up to the present time this material has been made very little use of.

It is to be found chiefly—as far as I know—in the following :—

1. The General Stud Book by James Weatherby (Keeper of the Match Book, and Secretary of the Jockey Club, as successor of Tutting and Fawconer). Volume I. appeared in 1793; the 5th Edition, very much improved and enlarged in 1891.

Volume	II.	1821.	4th	Edition,	1892.
,,	III.	1827.	4th	,,	1883.
,,	IV.	1836.	4th	,,	1899.
,,	V.	1845.	3rd	,,	1889.
,,	VI.	1849.	3rd	,,	1881.
,,	VII.	1853.	3rd	,,	1894.
,,	VIII.	1857.	2nd	,,	1883.
,,	IX.	1861.	2nd	,,	1903.
,,	X.	1865.	2nd	,,	1893.
,,	XI.	1869.	2nd	,,	1904.
,,	XII.	1873.			
,,	XIII.	1877.			
,,	XIV.	1881.			
,,	XV.	1885.			
,,	XVI.	1889.			
,,	XVII.	1893.			
,,	XVIII.	1897.			
,,	XIX.	1901.			
,,	XX.	1905.			

2. An Introduction to a General Stud Book by James Weatherby had already appeared in 1791, consisting of various collections of Pedigrees gathered from Racing Calendars and Newspapers.

3. The Turf Register and Sportsman and Breeder's Stud Book by William Pick.

Volume I. appeared in York 1803.
,, II. ,, ,, ,, 1805.
,, III. ,, ,, ,, 18? } by R. Johnson.
,, IV. ,, ,, ,, 1867. }

In this Turf Register the pedigrees and racing performances of the most prominent stallions and mares are very clearly arranged. There are also many valuable notes added on Breeding.

4. The Ancestress of the English Thoroughbred, by Hermann Goos, 1885. 4th Edition extended by Dr. A. de Chapeaurouge, 1907.

5. Frentzel's Family Tables of English Thoroughbred Stock, 1889.

6. Modern Pedigrees by Antwerp and Lamplighter, New York, 1895.

7. Tables of Pedigrees of Thoroughbred Horses by Ch. Wackerow. Volume I., 1900, from the earliest accounts to 1897 inclusive. Volume II., 1904, from the earliest accounts to 1902 inclusive.

8. Historical List of all the Plates and Prizes run for on Clifton and Rawcliffe Ings, also since being moved to Knavesmire, near the city of York, etc., appeared in 1748 at York. It contains the Reports of the Races at York from 1709 to 1747.

9. The first Racing Calendar appeared in 1727, and was called: An Historical List of all Horse Matches run for in England and Wales, by John Cheny, 24 Volumes covering the period from 1727 to 1750. From 1741 the Races in Ireland were also included.

10. After Cheny's death appeared the Continuation by Reginald Heber under the same title, 18 Volumes covering the period from 1751 to 1768.

11. After Heber's death there appeared the Continuation, under the title of: The Sporting Calendar, by William Tutting (Keeper of the Match Book at Newmarket), and Thomas Fawconer (Secretary of the Jockey Club), 4 Volumes, covering the period from 1769 to 1772. In the volumes for 1771 and 1772 the Races in Jamaica are included.

12. The Continuation appeared under the title of: Racing Calendar, edited by James Weatherby (Keeper of the Match Book at Newmarket and Secretary of the Jockey Club), 135 Volumes, covering the period from 1773 to 1907.

Up to 1800 the Races in Ireland are included, but from 1801 there is simply an abstract from the Irish Racing Calendar given, and in 1903 and 1904 the Races in Ireland are left out altogether. Of Foreign Races are included: 1770, the Races in America (Annapolis, Philadelphia and New York), 1773, 1776, 1777, the Races in Jamaica; 1776, the Races in France at Sablon and Fontainebleau; and in 1792 and 1793, the Races at Moscow. Since 1864 there has always been an Abstract of the important Races on the

Continent included. Since the Autumn of 1867 the Hurdle Races have been left out, and since July, 1871, the National Hunt Flat Races have been omitted. Up to 1840 the Reports on Cock Fighting were included.

13. Irish Racing Calendar, 118 Volumes, covering the period from 1790 to 1907.

14. Turf Annals of York and Doncaster, by John Orton, appeared 1843, and contains in one volume the Races at York and Doncaster from 1709 to 1843.

15. Bailey's Racing Register appeared in 1845 in three thick volumes, and gives in a very convenient and lucid manner an abstract of all the great Races in England and Ireland from 1709 to 1842.

16. The Racing Calendar Abridged appeared in 1829, and contains in one volume the important Races in England and Ireland from 1709 to 1750.

17. Pick's Racing Calendar, 49 Volumes, covering the period from 1709 to 1826, containing all the Races in England and Ireland, appeared first under the title of: The Sportsman and Breeder's Vademecum, then as Racing Calendar. Since 1803 as The Annual Racing Calendar, since 1811 as Pick's (Annual) Racing Calendar. The first Editor, W. Pick, died in 1816.

18. The Sporting Calendar, by John Pond, 18 Volumes, covering the period from 1751 to 1768, containing the Races in England and Ireland. In the Appendix of the volume for 1751 all the Matches which were held at Newmarket from 1718 to 1751 are included.

19. The Pocket Racing Calendar for the Races in Great Britain from 1821 to 1840 (?)

20. An Historical List of Horse Matches, Plates and Prizes in Great Britain and Ireland, by B. Walker, 2 Volumes, covering the years 1769 to 1770.

21. The Sporting Magazine. First year of circulation, 1792. A competing paper appeared in 1839 under the title of "The Sporting Review," by Craven, and was amalgamated from 1847 with the "Sporting Magazine." Also, the competing papers "The Sportsman" and "New Sporting Magazine," appeared in 1831. Since 1855 the "Sporting Magazine" appeared with the addition: United with the Sportsman, Sporting Review, and Sporting Magazine.

Bailey's Magazine, commencing 1870 (86 Volumes up to and including 1906), may be considered as a continuation of the Sporting Magazine (156 Volumes), which finished 1870.

22. The Steeplechase Calendar. A consecutive chronicle of the Sport in Great Britain from the great match over Leicestershire in 1826 to the close of 1844, to which is added the Irish Sport from the Autumn of 1842. Anonym, London, 1845.

23. Supplement to the Steeplechase Calendar. The Sport in Great

Britain, Ireland and France, from January, 1845, to the close of the season 1846, by Corbet.

The following appeared under the title of : The Steeplechase Calendar, etc. The next and last volume by Corbet appeared under the same title, but did not include the Races in France.

24. The Steeplechase Calendar, by Joseph Osborne, 18 Volumes, covering the periods from 1848-49 to 1865-66.

25. The Racing Calendar Steeplechase Past, by Weatherby, 40 Volumes, covering the periods from 1866-67 to 1907.

26. The Olde New-Markitt Calendar of Matches, Results and Programmes, from 1619 to 1719, by J. B. Muir, 1892.

27. Raciana, by J. B. Muir, appeared 1890, and gave various interesting notes on the few Matches at Newmarket and York, as well as the rider's colours.

28. Gentleman's Magazine, 116 Volumes, covering the period 1731 to 1846.

29. The Sportsman's Dictionary, by experienced Gentlemen. London, 1778.

30. History and Delineation of the Horse in all his varieties, comprehending the appropriate uses, management and progressive improvement of each, with a particular investigation of the character of the Racehorse, and the business of the Turf, by John Lawrence, 1809. This ran through 14 Editions.

31. How to Chase, Ride, Train and Diet both Hunting Horses and Running Horses, by Jessis Markham. London, 1599.

32. The Complete Gamester, or Instructions how to play at Billiards, etc., together with all manner of usual and most gentle Games, either at Cards or Dice, to which is added the Arts and Mysteries of Riding, Racing, Archery and Cock Fighting. 1680.

33. The Gentleman's New Jockey. Farrier's Approved Guide : containing the Exactest Rules and Methods for Breeding and Managing Horses in order to bring them up in the best manner for Profit, Pleasure, Service or Recreation, especially in what relates to Racing or Running, Coursing, Travel and War, etc. 3 Editions, 1696.

34. The Post and the Paddock, by The Druid. London, 1857.

35. Scott and Sebright, by The Druid. London, 1862.

36. Silk and Scarlet, by The Druid. London, 1862.

37. Field and Fern (South), by H. H. Dixon. London, 1865.

38. Field and Fern (North), by H. H. Dixon. 1865.

39. Saddle and Sirloin, by The Druid. London, 1870.

40. Life and Times of The Druid (H. H. Dixon), by Hon. Francis Lawley. 2nd Edition, London, 1895.

41. A Treatise on the Care, Treatment and Training of the English Racehorse, by R. Darvill. London, 1828.

42. History of the British Turf from the Earliest Times to the Present Day, by J. Ch. Whyte. 2 Volumes, 1840.

43. Horse Racing: Its History, and Early Records of the Principal and Other Race Meetings. Anonym, 1863.

44. The History of Newmarket and Annals of the Turf, by J. P. Hore. 3 Volumes, 1886.

45. Portraits of Celebrated Race Horses of the Past and Present Centuries, by Th. H. Taunton. 4 Volumes, 1887.

46. The Horse: How to Breed and Rear Him, by W. Day. London, 1888. 2nd Edition, 1890.

47. The Racehorse in Training, by W. Day. London, 1880. 7th Edition, 1892.

48. The Racehorse, by Warburton. London, 1892.

49. Racing Life of Lord George Cavendish Bentick, by John Kent. 1892.

50. Ashgill, or the Life and Times of John Osborne, by J. B. Radcliffe. 1900.

51. Breeding Racehorses by the Figure System, compiled by the late C. Bruce Lowe, by W. Allison. London, 1895. Translated into German, 1897, by V. Kirschy.

52. The British Thoroughbred Horse: His History and Breeding, together with an Exposition of the Figure System, by W. Allison. London, 1901. 2nd Edition, 1908.

53. The Horse Breeder's Handbook, by Joseph Osborne. 1889.

54. Royal Ascot, its History and its Associations, by G. J. Cowthorne and R. S. Herod. 1902.

55. From Gladiateur to Persimmon, by Sydenham Dixon. London. 1901.

56. The English Turf, by Charles Richardson. London, 1901.

57. A History of the English Turf, by Th. A. Cook. 3 Volumes, about 1905.

58. The British Turf and the Men who have made it, compiled by the "Sporting Life." London, 1906.

59. On the Laws and Practice of Horse Racing, by Admiral Rous. London, 1852. 2nd Issue, 1866.

60. Horse Racing in England, by Robert Black. London, 1893.

61. Kingsclere, by John Porter, edited by Byron Webber. London, 1896.

62. Eclipse and O'Kelly. Being a Complete History, so far as is known, of that celebrated English Thoroughbred "Eclipse" (1764-1789), and of his breeder, the Duke of Cumberland, and of his subsequent owners, William Wildman, Denis O'Kelly and Andrew O'Kelly, now for the first time set forth from the original authorities and family memoranda, by Th. A. Cook. London, 1907.

63. Heroes and Heroines of the Grand National, by Finch Mason. London, 1907.

64. The Romance of the Derby, by Edward Moorhouse. 2 Vols., London, 1908.

CHAPTER II.

Development of the Thoroughbred and Racing Trials in England. Most Important Events.

GOING back to the time when England was ruled by the Romans, Anglo-Saxons and Normans, we find that Oriental blood was employed for the purpose of breeding Racehorses in this country. Shortly afterwards the Crusades again gave the opportunity of introducing Oriental blood, and as early as 1509-1547 Henry VIII. had special paddocks made in his stud at Hampton Court for the breeding of Racehorses. During the reign of James I. (1603-1625) the importation of Oriental stallions increased very much, and during the reign of Charles II. (1660-1685) 30-40 Oriental mares, called the "Royal Mares," were brought over. We have reason to suppose that up to 1750 about 60-80 Oriental mares had been imported to England, whilst the number of stallions imported from the East was much greater. It seems that only a very few of these Eastern stallions and mares were pure bred Arabs. The greater part were Berbers and Spaniards, whilst some were Turkish and others Persians. Also the home-bred English horse, so much praised by Cæsar, and after him by many other writers on this subject, on account of its staying powers and speed, contributed very largely to the building up of the English Thoroughbred. These native-bred horses in England and Ireland had the character of the wild horses of the Steppes, and are mentioned as living in the forests as late as the seventeenth century, with the remark that they were better and more capable than any other breed in Europe; whilst nowhere was there to be found such good, nourishing grass, as in England and Ireland (see the Sportsman's Dictionary, 1778). In the fourth part of the first volume of the "General Stud Book" there are 102 Eastern stallions given which have been used in the building up of the Thoroughbred, but besides these there were many other Eastern stallions imported and used by breeders in England and Ireland (although the results, as far as the Thoroughbred is concerned, were probably very meagre), as can be gathered, for instance, from the publications in the old Racing Calendars. Of the 102 Oriental stallions which, according to the Stud Book, were imported, about 65 were imported before the famous Godolphin Arabian. It is worthy of note that, of the many Oriental stallions which were brought over to England

after the famous Godolphin Arabian (probably a Berber), imported *via* Paris in 1730, none of them exercised any striking influence on the Thoroughbred of that time. Of the Oriental stallions imported from 1730 to the end of the eighteenth century (at least 40), probably the Cullen Arabian, imported in 1745, was the best, and even he did not leave behind any son of note, although many of Cullen Arabian's children won races, amongst which was Exotic, born 1756, up to the age of twelve inclusive, and although a son, called Camillus, born 1748, begot some race-winners, yet there has been nothing imperishable left behind. Of the many daughters of Cullen Arabian there are only two out of Lady Thigh in Fam. 12 a, one Foundation mare in Fam. 2 (born 1756), and one Foundation mare in Fam. 42 (born 1760) which can be said to have left anything lasting as breeding stock.

In the following list are given the 36 Oriental stallions which have played a very conspicuous part in the breeding of Thoroughbreds, and which occur very often in the pedigree of every Thoroughbred of our time.

We give below a list showing the probable year of their importation :—

1. 1635 Lord Fairfax's Morocco Barb.
2. 1660 Place's White Turk.
3. 1665 Dodsworth's (Mother imported in foal).
4. 1670 The Darcy Yellow Turk.
5. 1675 The Darcy White Turk, or Sedbury Turk.
6. 1680 The White-Legged Lowther Barb.
7. 1680 Shaftesbury Turk.
8. 1680 The Helmsley Turk.
9. 1687 The Stradling, or Lister Turk.
10. 1689 The Byerly Turk.
11. 1689 Oglethorpe Arabian.
12. 1690 Pulleine's Chestnut Arabian.
13. 1690 Leede's Arabian.
14. 1690 Fenwick Barb.
15. 1690 The Taffolet, or Morocco Barb.
16. 1695 The Marshall, or Selaby Turk.
17. 1700 Curwen's Bay Barb, or Pelham's Barb.
18. 1704 Holderness Turk.
19. 1706 Chillaby.
20. 1706 Darley's Arabian.
21. 1707 The St. Victor Barb.
22. 1708 Honywood's Arabian, or William's Turk.
23. 1708 The Akaster Turk.
24. 1709 Alcock's Arabian.
25. 1711 Bethel's Arabian.
26. 1712 The Strickland's Turk, or Carlisle's Turk or Barb.
27. 1713 Woodstock, or William's Arabian.
28. 1716 Bassett's Oxford Bloody-Shouldered Arabian.

29. 1717 Wynn Arabian.
30. 1718 Hall Arabian.
31. 1719 The Belgrade Turk.
32. 1720 Cyprus Arabian.
33. 1723 Lonsdale Bay Arabian.
34. 1723 Hutton's or Mulso Bay Turk.
35. 1725 Bloody Buttocks.
36. 1730 Godolphin Arabian.

Horse-racing as a popular amusement was indulged in even in the times of the Romans, and during the four years which King Severus passed at York (206-210) the Roman soldiers arranged races with Arabian horses at Wetherby, near York. King Athelstan (924-940) was presented with race-horses, which had been bred in Germany, by his brother-in-law, Hugo Capet, Duke of Burgundy, later King of France.

The first race in England of which we have a reliable description took place in 1377. Unfortunately, the place is not stated.

This race was a match between the Prince of Wales (later Richard II.) and the Earl of Arundel. In all probability it took place at Newmarket. But already in 1309, and probably earlier, races (tournaments) had taken place at Newmarket (founded 1226, after the Plague had destroyed the old market). Further, according to reliable information, races took place at the following periods:—

1511 at Chester (the Silver Bell, since 1609 Silver Cup).

1552 at Hattington (Scotland).

1574
1585
1587
1588 } at Croydon in presence of the Queen.

1576 at Richmond.

1585 at Salisbury. The Earl of Cumberland won the Golden Bell in a three-mile race.

1590 at St. James' Park.

1590 at York.

1595 at Doncaster.

1599 at Carlisle (the Silver Bell).

1601 at Teviotdale.

1602 at Huntingdon.

1605 at Newmarket in presence of James I. (1603-1625).

1607 in November a hunting match or steeplechase took place at Huntingdon, between Lord Haddington and Lord Sheffield.

1617 at Woodham Moor, and at Lincoln races for the Cup took place in the presence of the King, James I.

1620 at Paisley (Scotland), the Silver Bell.

1632 at Harleston (Silver Cup).

1634 The establishment of the Gold Cup at Newmarket, the first winner of which, in 1719, was the Duke of Rutland's mare, Brown Betty, born 1713, by Basto (see Fam. 5).

1661 at Epsom, formerly called Banstead Downs, in the presence of King Charles II. (1660-1685). Epsom was formerly famous as a health resort on account of the healing properties of its waters, and race meetings were held there even in the reign of James I. (1603-1625).

1672 at Liverpool.

Towards the end of the seventeenth century race meetings were held regularly at Newcastle, Northamptonshire, Winchester, and many other places, and somewhere about 1635 a match, described in detail, took place in Hyde Park, London.

From 1654 to 1658 races were forbidden by Oliver Cromwell for political reasons, although he himself was a breeder and owner of racehorses.

There exists an exact register of the horses at the time when the Royal Tuttbury Stud in Staffordshire was handed over to the Parliament in 1649.

There was in the Royal Stud at that time:

23 Brood Mares with
23 Sucking Foals,
15 Brood Mares without Foals,
22 One-year-old Colts and Fillies,
17 Two-year-old Colts and Fillies,
16 Three-year-old Colts and Fillies,
23 Four-year and older horses.

After the Restoration, Charles II. (1660-1685) established in 1665 the so-called King's Prizes, known as The King's (Queen's) or His Majesty's Plates—also called the Royal Plates. Run over the new round course at Newmarket, R. C. = 3 miles, 6 furlongs, 93 yards (now R. C. = 3 miles, 4 furlongs, 187 yards), with heats under 12 stone.

These King's Plates have played an important part in the testing of the breeding material, and they still exist, but without heats, and over shorter distances.

Under the reign of James II. (1685-1688), Gentlemen's Races took place in Newmarket, as, for instance, in 1688, under 12 stone, over 4 miles, with 3 heats. Towards the end of the seventeenth century there were races with conditions for sale.

It can safely be taken for granted that as early as the beginning of the seventeenth century regular races were held at different places for the purpose of testing breeding material, whilst the races which took place before this time were more in the character of popular amusement.

The first breeding tests with which we are acquainted arose from matches, about which we have an account in the collection published by Muir in 1892,

covering the period 1619 to 1719, but, unfortunately, in many cases the names of the horses are not given.

The riders at that period were often Gentlemen, and sometimes even Kings. Charles II. and William III. ran and won many races. Of one race in 1674 the report reads as follows :—

"Yesterday His Majesty (Charles II.) rode himself three heates and a course, and won the Plate—all fower were hard and neer ridden, and I do assure you the King wonn by good horsemanshipp" (see Olde New-Markitt Calendar, by Muir, page 19).

The distances were generally 4-6 miles, 1681 once 10 miles, 1708 once 12 miles. Most of the races had to be run and won twice, that is to say, the races were run with "heats." The age of the horses on the racecourse was generally over 6 years, the weight usually 8-12 stone.

Newmarket was the chief racing place for all the best matches, and was famed as such, so that even Peter the Great expressed the wish to become acquainted with this sporting place.

In 1698 the Czar visited Newmarket in the company of William III., and participated in a race meeting at that place.

The following horses were winners of the races of that early period, and were used for the building up of the Thoroughbred :—

1. Old Careless, born about 1690, by Spanker and a Barb mare, ran and won 1698-1702 at Newmarket, over 5 and 6 miles.

2. Honeycomb Punch, born about 1692, by Taffolet or Morocco Barb, ran and won 1699 at Newmarket, over 4 miles.

3. Basto, born 1702, by Byerly Turk and the Bay Peg, ran and won several times 1708 and 1709 at Newmarket, over 4 miles.

4. Duke of Bolton's Bay Bolton, born 1705, by Grey Hautboy—Makeless, ran and won 1712 and 1713 at Newmarket, over 5 and 6 miles, having already won the Gold Cup over 4 miles at York in 1710.

5. Snail, born about 1710, by Whynot, ran several times at Newmarket in 1718, over 4 miles.

6. Flying Childers, born 1714, by Darley's Arabian and Betty Leedes, won as a six, seven and eight-year-old, five matches at Newmarket, over 4 and 6 miles.

It was only after the year 1728 that a few races were arranged for four-year-olds; at Hambledon, 3 miles without heats, 10 stone, and at Scarborough, 2 miles with heats, 9 stone.

In 1732 Blacklegs won a match as a four-year-old.

The first four-year-old winner of importance, as regards breeding, was Starling in 1727, by Bay Bolton (at Hambleton).

A sweepstakes for four-year-olds at Newmarket took place in October, 1730, and since 1731 the same were arranged several years in succession, 4 miles without heats, 8 stone, 5 lbs.

In order to give the small horses more chance in the races, in 1713, according to authority (but probably even earlier), the weights in special races were fixed according to the size of the horse. The races were called the "Give and Take Plates." Before 1750 the standard measurement for a horse was 12 hands high = 122 cm.; normal weight 5 stone, and for each increase of 1 inch ½ stone more. Also 7 lbs. was allowed for each year under seven years. In 1751 there were fifteen races for the King's Plates, and likewise fifteen for the Give and Take Plates. Whilst the races for the King's Plates are still in existence, the Give and Take Plates gradually disappeared in the first half of the nineteenth century. The qualifications for these latter were published for the last time in the Racing Calendar of 1858. In the eighteenth century these races were important, in so far as several of the winners of the Give and Take Plates were the source from which came the material for the building up of the Thoroughbred. They were as follows:—

1. Grey Grantham, born about 1710, by Brownlock Turk, won 1717 at Newmarket.

2. Y. Cartouch, born 1731, by Cartouch, won four times as a five, seven and eight-year-old.

3. Squirt, born 1733, by Bartlet's Childers, won as a seven-year-old in Give and Take Plates with heats.

4. Ankaster Starling, born 1738, by Old Starling, won as a nine-year-old twice, as a seven-year-old unplaced.

5. Dormouse, born 1738, by Godolphin Arabian, won as an eight to eleven-year-old, four races with heats.

6. Cub, born 1739, by Fox, won as an eight-year-old once with heats.

7. Torismond, born 1739, by Old Starling, won as a seven-year-old once.

8. Othello, born 1743, by Crab, won as an eight-year-old.

The races for the King's Plates, established by Charles II. in 1665, formed, from about the beginning of the nineteenth century, the main trials of young Thoroughbreds, corresponding to our present so-called five classical races—Derby, Oaks, St. Leger, 1,000 and 2,000 Guineas Stakes. At first the King's Plates were only for six-year-olds under 12 stone, and over 4 miles with heats, but later both older and younger horses were admitted. Since 1750 a part of the King's Plates were also open for four and five-year-olds, over 2 miles with heats, under 9 and 10 stone respectively.

These King's Plates at first consisted of silver dishes of the value of £100, upon each of which was engraved the name and pedigree of the winner. It was not until the time of George I. (1714-1727) that, instead of these prizes, money prizes were given. This money was partly raised by gentlemen who themselves had no racehorses, with the express idea that this money should go to the Crown, for races over long distances with heats and heavy weights, in order to improve the breed of Hunters, and not merely for breeding horses

with beautiful forms and great speed. (See the Gentleman's Magazine, April, 1739.)

The most prominent winners of the King's Plates up to 1850, as well as those which have played an important part for breeding purposes, were the following :—

1. Coneyskins 1712 by Lister Turk.
2. Cade 1734 by Godolphin Arabian.
3. Regulus 1739 by Godolphin Arabian.
4. Tartar 1743 by Herod.
5. Shakespeare 1745 by Hobgoblin.
6. Eclipse 1764 by Marske (or Shakespeare).
7. Conductor 1767 by Matchem.
8. Woodpecker 1773 by Herod.
9. Highflyer 1774 by Herod.
10. Mercury 1778 by Eclipse.
11. Waxy 1790 by PotSos.
12. Gohanna 1790 by Mercury.
13. Stamford 1794 by Sir Peter.
14. Sorcerer 1796 by Trumpator.
15. Dick Andrews 1797 by Joe Andrews.
16. Penelope 1798 by Trumpator.
17. Orville 1799 by Beningbrough.
18. Walton 1799 by Sir Peter.
19. Sir Paul 1802 by Sir Paul.
20. Whalebone 1807 by Waxy.
21. Catton 1809 by Golumpus.
22. Master Henry 1815 by Orville.
23. Langar 1817 by Selim.
24. Guiccioli 1822 by Bob Booty.
25. Little Red Rover 1827 by Tramp.
26. Priam 1828 by Emilius.
27. Birdcatcher 1833 by Sir Hercules.
28. Venison 1833 by Partisan
29. Bees Wing 1833 by Dr. Syntax.
30. Harkaway 1834 by Economist.
31. Lanercost 1835 by Liverpool.
32. Clarion 1836 by Sultan.
33. Alice Hawthorn 1838 by Muley Moloch.
34. The Cure 1841 by Physician.
35. Elleidale 1844 by Lanercost.
36. Canezou 1845 by Melbourne.
37. Flatcatcher 1845 by Touchstone.
38. Kingston 1849 by Venison.
39. Torment 1850 by Alarm.
40. Rataplan 1850 by The Baron.

The racing trials for horses in matches, which had been very costly for the owners, gradually became cheaper through the Sweepstakes, which were introduced at the beginning of the eighteenth century, and also by the increase of different Plates. In this way, and through the Handicaps, which were introduced in 1791, the participation in racing sport grew very considerably, less rich gentlemen now being able to participate in it. According to the statement of Admiral Rous, there were for instance :—

	Matches.	Sweepstakes.	Plates.
1762	49	38	205
1807	189	263	269
1843	86	897	191

The further development of racing sport in England and Ireland can be seen from the following dates :—

1709. The first Racing Report of the Races at Clifton and Rawcliffe Ings, York (see Bailey's Racing Register). Gold Cup, 4 miles with heats, 12 stone—4 starters. Since 1731 the races take place at Knavesmire, York.

1710. Bay Bolton won the Gold Cup at York over 4 miles with heats, as a five-year-old, under 12 stone, the weight for six-year-olds.

1711. On the 11th of August, the opening of the new racecourse at Ascot in the presence of Queen Ann (1702-1714). A £50 Plate for six-year-olds, 12 stone, 4 miles with heats—7 starters. Winner, Duke of St. Albans' chestnut colt, Doctor.

The racing reports gathered from newspapers and letters, covering the periods 1711, 1712, 1713, 1720, 1722, 1724 and 1726, about the races held at Ascot, were first published in 1902 (see Royal Ascot, its History and Associations, by G. J. Cawthorne and R. S. Herod).

1712. First race for five-year-old colts at York. The Ladies' Plate, 10 stone, 4 miles without heats. The proposition of this race, later called the Great Subscription, remained unchanged until 1758, that is to say, they remained unaltered for a period of 49 years. Since 1759 only the weight was reduced to 9 stone.

1715. First race for five-year-old mares at (Black) Hambleton. His Majesty's Gold Cup, 10 stone, 4 miles without heats—15 starters. This race had always stronger fields than that for five-year-old colts at York. 1716, 12 starters (winner, Brocklesby Betty, foundation dam of Fam. 23); 1717, 21 starters; 1718, 19 starters; 1719, 31 starters; 1720, 18 starters; 1721, 20 starters; 1722, 22 starters; 1723, 19 starters; 1724, 26 starters. The proposition of this race remained unchanged, with the exception of the name, as long as the races were run at Hambleton, that is, up to 1775. After 1776, when these races took place at York, the racing propositions for three-years remained the same as for five-year-old mares; 10 stone, 4 miles—that is to say, they remained unaltered for a period of 64 years.

1716. First racing report of the races which took place at Newmarket

(apart from the matches from 1619 to 1719, which have already been mentioned above, and in the special collection by Muir).

1719. Bonny Black, foundation mare of the Fam. 39, won the Gold Cup at Hambleton as a four-year-old under 10 stone, at the weight for five-year-olds, over 4 miles, in a field of 31 starters. Bonny Black had already won a match as a three-year-old at Newmarket.

1725. First racing report of the races at Richmond.

1727. On the 12th of March, Tregonwell Frampton, Manager of the Royal Racing Stables under William III., Queen Ann, George I. and George II. died, at the age of 86. He was called "The Father of the Turf," and was interred at Newmarket.

1727. Appeared the first Racing Calendar, under the title of: "An Historical List of all Horse Matches and of all the Plates and Prizes run for in England and in Wales (of the value of £10 or upwards) in 1727," by John Cheny. From this year there has appeared regularly up to the present time a Yearly Racing Calendar. In the first Racing Calendar were included the races run at 112 places, amongst which the following are well known to-day: Ascot Heath, Epsom, Hambleton, Liverpool, Nottingham, Richmond, Lewes, Lincoln, Ipswich, Stamford, Oxford, Peterborough, Winchester, York.

1728. First race for four-year-olds at Hambleton, Bishop Auckland, and Hunmanby, at Hambleton, 10 stone, 3 miles—15 starters; 1729, 13 starters; 1730, 17 starters; 1731, 15 starters; winner, Old Starling, born 1727 by Bay Bolton, first four-year-old winner which played an important part in the breeding of the Thoroughbred, and shortly afterwards in the first years of these races for four-year-olds the following are noteworthy:—

Sedbury 1734 by Partner (won at Hambleton).

Fox 1735 by Partner (won at Malton).

Traveller 1735 by Partner (won at Hambleton).

1730. First race for four-year-olds at Newmarket, 8 stone, 5 lbs., 4 miles—4 starters.

First racing reports in the Racing Calendar of the races run at:

1728. Doncaster.

1729. Chester.

1731. Canterbury.

1733. Manchester.

1741. Curragh of Kildare (Ireland).

From 1741 no races could be held with a prize of less than £50, excepting the cases where the prizes were specially bequeathed (*i.e.*, left as bequests).

At the same time the following weights were agreed upon for the "King's Plates":—

For five-year-olds 10 stone.
For six-year-olds 11 stone.
For seven-year-olds 12 stone.

1750. Jockey Club established at Newmarket.

1751. 15 King's Plates were run for in England as follows:—

10 for six-year-olds, 12 stone, 4 miles with heats.
1 for five-year-olds, 10 stone, 2 miles with heats.
1 for four-year-olds, 9 stone, 2 miles with heats.
1 for four-year-olds and older, 4 miles with heats.
2 for five-year-old mares, 10 stone, 4 miles with heats.
15 Give and Take Plates.
In Ireland: 3 King's Plates, 4 miles with heats.

Altogether there ran in England and Ireland 681 horses, of which winners were:—

21 four-year-olds.
34 five-year-olds.
26 six-year-olds.
36 older.
64 age unknown.

According to the Sporting Calendar by John Pond, only 490 horses ran, of which winners were:—

18 four-year-olds.
33 five-year-olds.
24 six-year-olds.
45 older.
12 in Give and Take Plates.

1752. First known steeplechase match in Ireland over 4½ miles, between Mr. O'Callagnan and Mr. Edmund Blake.

1756. First race for three-year-old colts, mares and geldings, on the 4th of October at Newmarket—2 miles, 8 stone, 7 lbs. During the next thirteen years this was the only race for three-year-olds, and there were always good fields.

There were run:

18 King's Plates in England.
5 King's Plates in Ireland.

There ran altogether, in England and Ireland, 924 horses—779 in England and 145 in Ireland—of which winners were:

1 three-year-old.
45 four-year-olds.
45 five-year-olds.
33 six-year-olds.
49 older.
73 age unknown.

1760. The establishment of Tattersall's in London by Richard Tattersall, who in 1779 bought Highflyer for £2,500, and thereby laid the foundation of his fortune.

1762. Second October Meeting at Newmarket.

1763. First winner in the race for three-year-olds which played an important part for breeding purposes, viz., Virago (see Fam. 9, dam of Hollandaise L.).

1764. On the 1st of April Eclipse was born in the Duke of Cumberland's stud at Windsor (born 1721, died 1765), where already Crab, Marske and Herod had been born and kept as stallions.

1765. First race for three-year-olds in Ireland; September, Curragh. 2 miles; 7 stone, 7 lbs.

1766. The first Classical Cup-Race, which is still run at the present time: (Gold) Cup at Doncaster, at first for five-year-olds and older, 4 miles with heats; since 1772 for four-year-olds and older, 4 miles without heats; since 1786 for three-year-olds and older, 4 miles; since 1825, 2 miles, 5 furlongs; and since 1891 to the present time, 2 miles.

1771. July Houghton and Craven Meeting in Newmarket. For the first time the Craven (Trial) Stakes for three-year-olds and over, about 1¼ mile—a very popular race, with very strong fields. For instance: 1775, 29 starters; 1776, 26 starters; 1777, 29 starters; 1778, 29 starters. Up to 1812 no three-year-old was able to win the race. At the beginning there were many classical winners, viz.: Pantaloon, Woodpecker (three times), Pot8os, Buzzard (twice), Hambletonian (twice), Selim, Rubens, and others. Since 1878 the race has been only for three-year-olds, over 1 mile.

1771 and **1772.** Races in Jamaica were included in the Sporting Calendar.

1773. First volume of the Racing Calendar, by Weatherby, including also the races in Jamaica.

First race for two-year-olds and older at Newmarket in November, but in which *no two-year-olds* took part.

Two matches between two-year-olds and four-year-olds at Newmarket, of which the two-year-old colt Baby won, over 4 miles.

Sir Ch. Bunbury (since 1768 Steward, the First Dictator of the Turf, born 1740, died 1821), Lord Bolingbroke and Mr. J. Shafto were the Stewards who had already sanctioned the races for two-year-olds in 1770, about which there were very different opinions.

19 King's Plates in England, of which were:

7 for six-year-olds; 12 stone; 4 miles with heats.
1 ,, six-year-olds; 12 stone; 3½ miles with heats.
1 ,, five-year-olds; 10 stone; 4 miles with heats.
1 ,, five-year-olds; 10 stone; 3 miles with heats.
1 ,, five-year-olds; 9 stone; 3 miles with heats.
2 ,, five-year-olds; 8½ stone; 3 miles with heats.
1 ,, four-year-olds; 9 stone; 2¼ miles with heats.
1 ,, four-year-olds and over; 4 miles with heats.

1 for five-year-old mares; 10 stone; 3¼ miles without heats.
1 ,, five-year-old mares; 9 stone; 2 miles with heats.
1 ,, four-year-old mares; 8½ stone; 2 miles with heats.

10 King's Plates in Ireland, of which were:
6 over 4 miles with heats.
2 without heats.

Altogether there ran 1,069 horses in England and 206 horses in Ireland.

1774. By special command of the King, from 1774 all King's Plates were to be run at York without heats.

1775. October, Newmarket, 1 mile match, one three-year-old, 8½ stone, beat a two-year-old, Frontino, 6½ stone.

1776. In the Racing Calendar, the races in France (at Sablon and Fontainebleau), as well as those in Jamaica, were specified.

From this time onward all races at Newmarket were to be run without heats.

First race for two-year-olds October, Newmarket; ½ mile; 7 stone, 10 lbs.; 3 starters. Sweepstakes of £50 for each.

First St. Leger (convened as a sweepstakes) at Doncaster; 2 miles. colts, 8 stone; fillies, 7 stone, 12 lbs. The distances were later: Since 1806, 1 mile, 6 furlongs, 193 yards; since 1826, 1 mile, 6 furlongs, 132 yards.

Weights since:
1790. 8 stone, 2 lbs., and 8 stone respectively.
1826. 8 stone, 6 lbs., and 8 stone, 3 lbs. respectively.
1839. 8 stone, 7 lbs., and 8 stone, 2 lbs. ,,
1862. 8 stone, 10 lbs., and 8 stone, 5 lbs. ,,
1884. 9 stone, 0 lbs., and 8 stone, 11 lbs. ,,

1777. The races in Jamaica were specified in the Racing Calendar.

The first winner in a race for three-year-olds which had an important bearing on breeding, viz., Highflyer.

1778. First St. Leger under this name at Doncaster—8 starters. Named after Lieut.-General Anthony St. Leger, of Park Hill, neighbour and friend of the Marquis of Rockingham, who became Prime Minister in 1782, and owner of Alabaculia, which was the first winner of the St. Leger, 1776.

1779. First Oaks, on Friday, May 14th, at Epsom; 8 stone, 4 lbs.; 1½ miles—12 starters. Named after the estate belonging to Lord Derby, called the "Oaks," not far from Epsom.

Distance since 1872: 1½ miles and 29 yards.

Weight since:
1787. 8 stone.
1808. 8 stone, 4 lbs.
1842. 8 stone, 7 lbs.
1862. 8 stone, 10 lbs.
1892. 9 stone.

1780. First Derby, on Wednesday, the 4th of May, at Epsom. Colts, 8 stone; fillies, 7 stone, 11 lbs.; 1 mile—9 starters.

The distances:

Since 1784. 1½ miles.
,, 1872. 1½ miles and 29 yards.

Weights since:

1784. 8 stone, 3 lbs., and 8 stone respectively.
1801. 8 stone, 3 lbs., and 7 stone, 12 lbs. respectively.
1803. 8 stone, 5 lbs., and 8 stone respectively.
1807. 8 stone, 7 lbs., and 8 stone, 3 lbs. respectively.
1808. 8 stone, 7 lbs., and 8 stone, 2 lbs. ,,
1862. 8 stone, 10 lbs., and 8 stone, 5 lbs. ,,
1884. 9 stone, and 8 stone, 9 lbs., respectively.

The greater number of the races at Epsom were still run with heats.

October, Newmarket, three races for two-year-olds; one for fillies only, 7½ stone; and two for colts and fillies, distance 1 mile. Beside these, several other races for two-year-olds and over were held.

1781. 19 King's Plates in England.
12 King's Plates in Ireland.

Only 8 of these were run without heats, and 13 over 4 miles with heats.

Altogether 1,069 horses ran in England and Ireland. The winners were:

9 two-year-olds.
77 three-year-olds.
100 four-year-olds.
58 five-year-olds.
38 six-year-olds.
39 older.
30 age not known.

Amongst the two-year-old winners was Assassin, winner of the next year's Derby, and also Ceres, winner of next year's Oaks.

Afterwards (in 1785) Fidget won three races as a two-year-old, and later became sire of the nameless Derby winner of 1797. Besides this, Wren won five races as a two-year-old, and in 1795 became the dam of Bellisima, winner of the Oaks. At this time the races for two-year-olds became very popular.

1786. First classical race for two-year-olds: July Stakes at Newmarket. Colts, 8 stone, 2 lbs; fillies, 8 stone; offspring of Eclipse or Highflyer, 3 lbs. extra. (This extra weight for Eclipse and Highflyer's offspring was customary in many other races, just as at an earlier period Herod's offspring had to carry 3 lbs. extra). Distance, T. Y. O. C.=5 furlongs, 136 yards= 1,130 m.—7 starters.

1790. The first races in Ireland for two and three-year-olds together. First volume of the Irish Racing Calendar.

1791. First Handicap: The Oatlands Stakes, at Ascot; 2 miles—19 starters. Prize, 2,950 Guineas. Winner, Prince of Wales' six-year-old, Baronet, 8 stone, 4 lbs. The famous Escape, six-year-old, 9 stone, 10 lbs., not placed. The three-year-old Vermin, 5 stone, 3 lbs., had the lightest weight, and started as favourite. The race was very popular, and there must have been about 40,000 people at Ascot. The following year this Handicap was removed to Newmarket, and in 1870 was won by the three-year-old, Adonis, 7 stone, 2 lbs., over the Cambridgeshire course. In 1804 it was won by Penelope, a six-year-old, 9 stone, 1 lb.

1791. Veterinary School founded in London by Charles Vial de Saintbel, a Frenchman, who became known in England through the dissection which he made of Eclipse in 1789, and the publicity caused by same. He was made first Professor of the Veterinary College of London.

1791. First race for two-year-olds in Ireland (at Ennis); $\frac{3}{4}$ mile. There was also a race for two-year-olds in the following year at Curragh.

First match with yearlings, October, Newmarket; 8 stone. Distance, Y. C.=2 furlongs, 147 yards=524 m. Winner, the one-eyed grey mare of Mercury—Herod, which ran once again as a two-year-old not placed, then up to 14 years was used as a riding and carriage horse. After that gave birth to nine foals, amongst which were three foundation mares of the Fam. 5 b. She was foundation dam of the Marigold, and when she was 27 bore her last foal.

The yearling, Cash (later Ariel), by Ready Rhino—Herod, won two matches in October at Newmarket against three-year-olds. Distance, Y. C.

The racing of yearlings was first officially forbidden in 1876.

The two-year-old, Anthony, (1789) by Diomed and the Golden Rose, ran fourteen races and won in eleven (including one w. o.).

1792. Three races in Moscow, Russia, were included in the Racing Calendar.

First known steeplechase in Leicester, over 8 miles.

1793. First year's circulation of the Sporting Magazine.

From this date the lengths of the different courses at Newmarket were stated.

First race for yearlings, sweepstakes, at Newmarket, October; 8 stone, 2 lbs. Distance, Y. C.—3 starters.

Besides this, two matches took place between yearlings.

Already in April a race had taken place at Newmarket for two-year-olds, 7 stone, 4 lbs. Distance, $\frac{1}{2}$ mile—4 starters.

22 King's Plates in England, and 13 in Ireland, of which 16 were over 4 miles with heats, and only 8 were over 2 to 4 miles without heats.

Altogether there ran in England and Ireland 923 horses. Winners were:

3 one-year-olds.
28 two-year-olds.

93 three-year-olds.
79 four-year-olds.
45 five-year-olds.
34 six-year-olds.
38 older.
36 age unknown.

Also, there were specified in the Racing Calendar three races which were run at Moscow (the eight-year-old Grey Diomed, by Diomed, won the Cup Prize, over 4 miles with heats).

First volume of the General Stud Book.

1795. One sweepstakes for yearlings at Newmarket, October; 8 stone, 2 lbs. Distance, Y. C.

In consequence of the political unrest of the period, the breeding of Thoroughbreds and racing trials was neglected. It was not until after 1815 that it again commenced to recover.

On account of the Revolution, a part of the races in Ireland did not take place. In the English Racing Calendar it is stated, erroneously, that no races were held, but some, as a matter of fact, did take place. In Ireland, the Racing Calendar for 1798 and 1799 appeared later in one volume.

1799. On the 25th of March, at Newmarket, took place the famous match between Hambletonian, 8 stone, 3 lbs., and Diamond, 8 stone; distance, B. C. = 4 miles, 1 furlong, 138 yards. Both seven-year-olds. Hambletonian won in $7\frac{1}{4}$ minutes.

1800. In September, at Doncaster, race for two-year-old colts, $1\frac{3}{4}$ miles (later 1 mile); 8 stone.

1802. First Racing Report, about the three days' meeting at Goodwood.

1804. The famous match for 1000 Guineas on the 25th of August, at York. Over 4 miles, without regard to weight: Mr. Flint's Brown Thornville, seven-year-old, by Volunteer. Ridden by the owner.—Colonel Thornton's Vinagarella, about twenty-year-old, by Woodpecker. Rider, Mrs. Thornton. In the last mile the aged Vinagarella became lame, and therefore Brown Thornville won easily in 9 minutes, 59 seconds.

1805. On the 24th of August, at York, the famous match for 700 Guineas and a Cup; 2 miles: Colonel Thornton's six-year-old, Louise, by Pegasus, 9 stone, 6 lbs., rider, Mrs. Thornton, and Mr. Blomfield's six-year-old, Allegro, by Pegasus, 13 stone, 6 lbs., rider, Francis Buckle. Amidst the unequalled enthusiasm of a tremendous crowd of spectators, such as had never before been seen at York, the famous lady rider beat Francis Buckle, the most noted jockey of that period, after a very exciting struggle, by half a neck.

1807. Fitzwilliam Stakes, in September, at Doncaster; $1\frac{1}{2}$ miles, for two-year-olds and older. Since 1850 Handicap.

For the first time the second classical race for two-year-olds, the Woodcot

Stakes, at Epsom, at Derby time; ¾ mile, for two-year-olds. Colts, 8 stone, 3 lbs.; fillies, 8 stone.

For the first time: The Gold Cup at Ascot, for three-year-olds and older, 2½ miles. 1845-1853 the prize was given by the Czar of Russia.

1809. For the first time: 2,000 Guineas Stakes at Newmarket, three-year-olds. Colts, 8 stone, 3 lbs.; fillies, 8 stone. R. M.=1 mile—8 starters. Distance the same up to the present time. Weight now: Colts, 9 stone; fillies, 8 stone, 9 lbs.

1813. For the first time: The Wokingham Stakes (Handicap) at Ascot, ¾ mile.

1814. For the first time: 1,000 Guineas Stakes at Newmarket, three-year-old fillies, 8 stone, 4 lbs. D. M.=7 furlongs, 178 yards. Distance since 1873 R. M. as in the 2,000 Guineas Stakes. Weight now 9 stone.

1816. For the first time: Gold Cup at Manchester, for three-year-olds and older.

1823. For the first time: The third classical race for two-year-olds, The Prendergast Stakes, at Newmarket, October, T. Y. O. C.

1824. For the first time: Chester Cup, for three-year-olds and older.

1825. For the first time: Goodwood Gold Cup, for three-year-olds and older; 2 miles. Since 1833 7 lbs. allowed for horses whose dam or sire was Oriental (including Persian or Turkish). Since 1834, 14 or 28 lbs. allowed, according as one or both parents were Oriental. Since, the allowance was raised to 18 and 36 lbs. respectively. In 1897 this allowance was done away with, as Orientals did not take part.

1826. For the first time: The Clearwell Stakes, at Newmarket, October, for two-year-olds—11 starters.

On the 31st of March, 1826, Capt. Ross won the first steeplechase match which is recorded in the Racing Calendar, at Leicester, over 4 miles, with his famous Hunter, Clinker, by Clinker—Sancho—Fidget, and the Lily of the Valley, by Eclipse. A detailed description of this match is to be found in the Sporting Magazine, volume 68, page 42.

1827. 26 King's Plates in England, 16 King's Plates in Ireland—17 over 4 miles with heats, 16 without heats.

1829. For the first time: The Criterion Stakes, for two-year-olds, at Newmarket, October.

First year's circulation of the Sportsman.

1830. First steeplechase, at St. Albans, for Cavalry Officers—16 starters.

1830-46. Lord George Bentick (born 1802 at Welbeck, died 1848) had 100 brood mares, 60 racehorses, and 3 training establishments. He was the second Dictator of the Turf, and he cleared the racecourse of defaulters.

1830. For the first time: The Lavant Stakes, at Goodwood, August; ½ mile. 15th September, opening of the first railway in England, from Manchester to Liverpool, in the presence of the Duke of Wellington.

1831. The Racing Calendar recorded the famous bet of Mr. Osbaldiston (born 1787. He was a celebrated sportsman, and also well known on account of his duel with Lord Bentick), who, on the 5th of November, rode, at Newmarket, R. C., with 11 stone, 2 lbs., 200 miles = 322 km., in 8 hours, 42 minutes, using 29 horses, which he changed every 4 miles.

1834. In the Spring Races at Newmarket the age of the horses was reckoned, as at the present time, from the 1st of January, instead of the 1st of May. For all other racing places up to 1858 the following held good :—

"Horses take their ages from May Day, *i.e.*, a horse foaled any time in the year 1830 will be deemed a year old on the 1st of May, 1831."

1836. On the 29th of February, first Liverpool Grand National Steeplechase; 12 stone, 4 miles, gentlemen riders—10 starters. Winner, Capt. Becher, after whom, later, the famous water leap was called, and over which Capt. Becher tumbled with Conrad. It was at first arranged as a Sweepstakes with selling conditions, and was run 1836-1838 over a course at Maghull, and only since 1839 over the course at Aintree, as at the present time. Since 1843 as a Handicap.

1837. On the 25th of October, auction at Hampton Court of the Thoroughbreds (5 stallions, 43 brood mares, 13 colts, and 18 fillies, sold for 15,692 Guineas).

1850, the stud of Thoroughbreds again established, and in 1894 disposed of for the second time.

1838. For the first time : Gold Vase at Ascot.

1839. For the first time, the two famous Handicaps at Newmarket : The Cesarewitch Stakes (the Russian Grand Duke Alexander gave £300), and The Cambridgeshire Stakes.

1840. For the first time : The Coronation Stakes at Ascot, three-year-old fillies, 8 stone, 7 lbs., 1 mile; and Stewards Cup (Handicap), ¾ mile.

The last reports on cock fighting in the Racing Calendar.

1842. At Epsom still five races with heats; at Goodwood three races with heats; at Doncaster two races with heats. At the smaller racing places most of the races with heats.

1843. For the first time : The Royal Hunt Cup (Handicap) at Ascot, for three-year-olds and older, 1 mile—24 starters.

1848-49. First volume of the Steeplechase Calendar, by J. Osborne.

1851. For the first time : The City and Suburban Handicap at Epsom, 1¼ miles—16 starters.

1853. For the first time : The Lincolnshire Handicap, 1½ miles, in March, at Lincoln. Still the first great Handicap of the year.

1855. Admiral Rous, "the third Dictator of the Turf," became Handicapper of the Jockey Club. The number of the two-year-old racing horses increase, and since 1856 outnumbers the three-year-olds.

1856. In November, at Shrewsbury, races for yearlings. Colts, 7 stone,

7 lbs.; fillies, 7 stone, 4 lbs.; ¼ mile—7 starters. Winner, Heroine, foundation mare in Fam. 2 b; 3rd, Saxony, foundation mare in Fam. 14; unplaced, Polly Peachum, foundation mare, Fam. 9.

1857. In November, at Shrewsbury, races for yearlings, as in 1856—4 starters. Winner, Tomboy, by Idleboy and Alexina. There were also several hurdle races with heats, of which the well-known half-bred mare, Heads or Tails (born 1854, by Sir Hercules, 27 years old), won a few.

1858. In November, at Shrewsbury, races for yearlings, as 1856—4 starters.

All the King's Plates in England without heats, and only one over 4 miles.

1859. Lord Jersey died. He was the greatest opponent to races for two-year-olds, and would not let his own two-year-olds run. He won the Derby three times: 1825 with Middleton, 1827 with Mameluck, 1836 with Bay Middleton. He won the Oaks once with Cobweb in 1824, and the 2,000 Guinea Stakes five times: 1831 with Riddlesworth, 1834 with Glencoe, 1835 with Ibrahim, 1836 with Bay Middleton, 1837 with Achmet. He won the 1,000 Guinea Stakes twice: 1824 with Cobweb, 1830 with Charlotte West.

1859. In November, at Shrewsbury, races for yearlings: The Anglesey Stakes, as in 1856—9 starters. Winner, Little Lady, foundation mare in Fam. 2 c, dam of Camballo 2.

33 King's Plates without heats in England, and 17 King's Plates in Ireland, of which one only was with heats.

Only at fifteen small racing places were races with heats still run.

1860. The proposal of Lord Redesdale to fix the minimum racing weight at 7 stone was rejected by the Jockey Club, and the minimum weight was fixed at 5 stone, 7 lbs., which was raised to 6 stone in 1889.

1863. The establishing of the National Hunt Committee.

1864. The Derby winner, Blair Athol, ran his second race in the Grand Prix at Paris, and was beaten with two lengths by Vermouth.

Since this year a small portion of the most important races on the Continent have been recorded.

1866-67. First volume of the Racing Calendar for Steeplechases, by Weatherby, as a continuation of that issued by J. Osborne.

1866. For the first time: The Middle Park Plate (1,000 Sovereigns, given by Mr. W. Blenkiron) for two-year-olds, at Newmarket, October; 6 furlongs—15 starters.

1873. For the first time: Jockey Club Cup, at Newmarket, Cesar. Course—6 starters. Winner, Flageolet.

1872. Middle Park Stud was sold after the death of the Manager, Mr. W. Blenkiron; Blair Athol to the Cobham Stud Co., newly established.

for 12,500 Guineas; Gladiateur for 7,000 Guineas to Capt. Ray; and Breadalbane for 6,000 Guineas to Germany.

1874. For the first time: The Brocklesby Stakes for two-year-olds; ½ mile, at Lincoln, in March—18 starters. First race in the year for two-year-olds.

1875. For the first time: Dewhurst Plate for two-year-olds, at Newmarket; 7 furlongs—12 starters. Winner, Kisber.

1878. First Race Meeting at Kempton Park (three meetings).

1879. For the first time: The Hartwicke Stakes for three-year-olds and older; 1½ miles, at Ascot.

Disposal of the Cobham Stud Co. which, after many a change, finally came into the possession of the International Horse Agency and Exchange, 46a Pall Mall, London, S.W., under the management of Mr. W. Allison.

1880. In England all the King's Plates were run over a two-mile course, but in Ireland there were still six over a three-mile course and two over a four-mile (as at present).

1886. The first £10,000 race: Eclipse Stakes, for three and four-year-olds, at Sandown Park; 1¼ miles—12 starters. Winner, Bendigo.

1887. The Royal Stud for Thoroughbreds was established at Sandringham.

1888. Ormonde was sold for £30,000 to the Argentine, and afterwards to Mr. Macdonough, California, Menlo Stud Stock Farm, near Francisco, for £31,000, where he died.

1889. For the first time: The Newmarket Stakes for three-year-olds. Distance, A. F. = 1 mile, 2 furlongs—17 starters. Winner, Donovan.

1894. The second £10,000 race: Princess of Wales', at Newmarket, for three and four-year-olds. Distance, B. M. = 1 mile; July—7 starters. Winner, Isinglass. Since 1901 for four-year-olds and older. Distance since 1902, Suff. St. C. = 1½ miles.

1897. Commencement of the American Jockey invasion.

In October Tod Sloan (born 1873) came to England, rode in fifty-three races and won twenty. On the last racing day he rode five races, won four times, and once came in second. In the following year Sloan came to England in September, ran ninety-eight races and won forty-two, among them the Middle Park Plate with Caiman, beating Flying Fox. In 1899 Sloan ran 343 races and won 108, came second with Caiman in the 2,000 Guineas, and in the St. Leger. In the Derby the French grey colt, Holocauste, broke his fetlock in struggling with Flying Fox.

In June, 1899, came the two brothers, L. Reiff and J. Reiff (14-year-old); and in 1900 D. Maher (18-year-old), from America to England.

1898. Introduction of the Australian starting machine for two-year-old races, and in the following year also for three-year-old races.

1900. Of the ten most successful jockeys who had won more than 50 races five were Americans, of whom L. Reiff stood at the head with 553 mounts and 143 wins. The most famous English jockey up to this time, S. Loates, followed with 809 mounts and 137 wins; then J. Reiff, with 604 mounts and 124 wins. The American style of seat at race-riding was now generally accepted. In the following table are named the champion jockeys of England in the last 50 years.

Year	Jockey	Wins.	Year	Jockey	Wins.
1859	G. Fordham	109	1884	F. Archer	241
1860	G. Fordham	146	1885	F. Archer	246
1861	G. Fordham	106	1886	F. Archer	170
1862	G. Fordham	166	1887	C. Wood	151
1863	G. Fordham	73	1888	F. Barrett	108
1864	J. Grimshaw	164	1889	T. Loates	167
1865	G. Fordham	142	1890	T. Loates	147
1866	Kenyon	126	1891	M. Cannon	137
1867	G. Fordham	145	1892	M. Cannon	182
1868	G. Fordham	121	1893	S. Loates	222
1869	G. Fordham	95	1894	M. Cannon	167
1870	W. Gray	77	1895	M. Cannon	184
1871	G. Fordham	88	1896	M. Cannon	164
1872	T. Cannon	88	1897	M. Cannon	145
1873	H. Constable	109	1898	O. Madden	161
1874	F. Archer	147	1899	S. Loates	160
1875	F. Archer	172	1900	L. Reiff	143
1876	F. Archer	207	1901	O. Madden	130
1877	F. Archer	218	1902	W. Lane	170
1878	F. Archer	229	1903	O. Madden	154
1879	F. Archer	197	1904	O. Madden	161
1880	F. Archer	120	1905	E. Wheatley	124
1881	F. Archer	220	1906	W. Higgs	149
1882	F. Archer	210	1907	W. Higgs	145
1883	F. Archer	232	1908	D. Maher	139

1900. Twelve yearlings from Eaton were sold by auction for £45,465, amongst which were: Sceptre, for £10,000 to Mr. Sievier; Flying Fox, a four-year-old, for £39,375 = roundly, one million francs, to Mons. E. Blanc.

Number of Horses which ran in England and Ireland.

In the Year	1	2	3	4	5	There ran	In the Year	1	2	3	4	5	There ran
	Years and older							Years and older					
	Number of Winners						1873	–	691	602	356	427	2079
							1874	–	710	572	320	363	1965
1741	—	—	—	—	—	407	1875	–	784	550	354	396	2084
1751	–	—	—	21	160	681	1876	–	769	592	303	390	2054
1756	—	–	1	45	200	924	1877		805	604	318	330	2057
1757	—	—	1	51	166	885	1878	—	873	612	321	291	2097
1758	—	—	1	58	215	931	1879	—	841	633	314	322	2113
1773	—	1	—	—	—	1275	1880	—	820	610	313	283	2026
1781	—	9	77	100	165	1069	1881	–	800	587	304	279	1970
1793	3	28	93	79	153	923	1882	—	840	553	252	271	1916
1795	1	31	90	64	132	834	1883	—	859	607	292	312	2070
							1884	—	840	572	291	276	1982
	Number of Horses that ran						1885	—	883	578	279	293	2033
1797	—	67	191	142	312	712	1886	—	880	593	293	310	2076
1802	—	39	142	123	346	650	1887	—	908	523	290	286	2007
1827	—	158	390	250	570	1368	1888	—	919	566	287	321	2123
1849	—	264	419	254	378	1315	1889	—	986	553	276	316	2131
1856	7	527	457	275	376	1642	1890	—	935	607	273	290	2105
1857	4	508	500	251	361	1624	1891	—	1062	613	296	314	2315
1858	4	601	436	280	318	1639	1892	—	1091	772	336	365	2564
1859	9	576	496	240	324	1645	1893	—	1108	727	399	384	2618
1860	—	608	521	302	286	1717	1894	—	1255	779	417	455	2906
1861	-	661	550	214	342	1767	1895	—	1297	900	417	475	3089
1862	—	626	528	291	381	1826	1896	—	1276	868	459	511	3114
1863	—	643	510	291	393	1837	1897	—	1369	965	616	606	3556
1864	—	664	548	298	438	1948	1898	—	1364	1039	517	651	3571
1865	—	659	572	364	447	2012	1899	—	1438	1059	558	698	3753
1866	—	729	572	359	449	2109	1900	—	1528	1116	589	688	3921
1867	—	752	661	408	637	2458	1901	—	1445	1179	614	719	3957
1868	—	814	631	418	617	2510	1902	—	1351	1070	617	762	3830
1869	—	812	673	402	617	2534	1903	not given					
1870	—	807	709	442	611	2569	1904						
1871	—	732	740	450	561	2483	1905	—	1297	1001	576	677	3551
1872	—	699	627	382	390	2098	1906	—	1348	981	525	690	3544

Since Autumn, 1867, the Hurdle Races, and since July, 1871, the National Hunt Flat Races, are not given in above figures.

Number of Races in England and Ireland from 1861 to 1880.

Distance.	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880
Up to and inclusive ½ Mile	230	256	230	251	266	324	390	417	461	388	179	188	216	233	261	269	251	256	190	8
Over half and under 1 Mile	444	474	589	634	655	721	745	803	850	814	1020	1032	1049	1044	1035	1053	837	900	924	1148
1 Mile	263	281	269	299	323	324	337	323	325	281	253	261	268	231	256	258	245	244	233	238
Over 1 and under 2 Miles	339	301	348	354	378	383	411	410	383	397	353	323	307	268	261	230	220	223	208	193
2 Miles and under 3 Miles	167	177	200	218	209	204	225	181	190	173	158	96	91	78	79	77	73	64	59	64
3 Miles and under 4 Miles	19	21	26	26	26	29	25	23	22	21	20	17	18	14	11	9	11	10	10	9
4 Miles	4	3	6	6	5	9	7	5	4	4	4	3	2	2	6	2	2	2	2	2
Total	1466	1513	1668	1788	1862	1994	2140	2162	2238	2078	1987	1923	1951	1873	1909	1907	1639	1699	1626	1662

Number of Races in England and Ireland from 1881 to 1906.

Distance.	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893
4 Furl. and under 5 Furl.	—	—	—	—	—	—	—	—	—	—	—	—	—
5 Furl. and under 6 Furl.	843	877	821	765	787	757	732	759	793	767	733	754	781
6 Furl. and under 1 Mile	277	284	241	248	258	261	260	262	256	238	205	204	204
1 Mile	238	226	344	333	349	331	312	333	345	359	146	479	489
1 Mile and under 2 Miles	191	190	202	191	183	191	183	184	176	183	192	203	193
2 Miles and under 3 Miles	57	53	75	66	56	56	53	40	42	38	10	41	37
3 Miles and under 4 Miles	9	8	11	8	10	8	7	7	8	7	7	5	7
4 Miles	2	4	4	4	4	5	2	4	3	2	3	2	2
Total	1617	1612	1698	1615	1647	1609	1549	1589	1623	1594	1626	1688	1713

Distance	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906
4 Furl. and under 5 Furl.	—	—	—	—	—	—	—	—	—	—	—	73	66
5 Furl. and under 6 Furl.	795	805	819	805	822	666	682	704	697	704	699	613	661
6 Furl. and under 1 Mile	208	224	232	240	252	347	352	347	349	355	331	352	369
1 Mile	509	486	514	538	556	381	358	341	339	345	342	342	351
1 Mile and under 2 Miles	198	215	223	220	228	441	469	494	515	523	515	515	553
2 Miles and under 3 Miles	48	46	55	67	53	65	61	68	88	94	96	86	110
3 Miles and under 4 Miles	8	8	7	9	8	8	1	3	3	1	1	1	2
4 Miles	2	3	3	2	2	3	1	1	1	1	1	1	1
Total	1768	1787	1853	1881	1921	1911	1924	1958	1992	2023	1988	2013	2113

Number of Races altogether.

Distance.	In England.				In Ireland.			
	1903	1904	1905	1906	1903	1904	1905	1906
4 Furlongs and under 5 Furlongs . .	—	—	73	66	—	—	—	—
5 Furlongs and under 6 Furlongs . .	627	615	551	572	77	84	89	89
6 Furlongs and under 1 Mile	299	281	296	316	56	53	56	53
1 Mile	305	302	299	308	40	40	43	43
1 Mile and under 2 Miles	444	435	446	457	79	80	69	96
2 Miles and under 3 Miles	30	30	29	34	64	66	57	76
3 Miles and under 4 Miles	—	—	—	—	1	1	1	2
4 Miles	—	—	—	—	1	1	1	1
Total . .	1705	1663	1697	1753	318	325	316	360

Number of Races for Two-year-olds in England and Ireland, 1899-1906.

Distance.	1899	1900	1901	1902	1903	1904	1905	1906
4 Furlongs and under 5 Furlongs . .	—	—	—	—	—	—	73	66
5 Furlongs and under 6 Furlongs . .	415	425	439	442	440	440	377	400
6 Furlongs and under 1 Mile	65	65	62	64	63	64	68	77
1 Mile	6	7	7	10	11	10	11	12
Total . . .	486	497	508	516	511	514	529	555

CHAPTER III.

Origin and Change in the Weight Tables, and the Conclusions to be drawn therefrom.

In the beginning and middle of the eighteenth century, *i.e.*, up to about 1760, the difference in weight of horses of various ages was calculated generally at the rate of 1 stone=14 English lbs. per year. For instance :

4 year-olds	9	stone.
5 year-olds	10	,,
6 year-olds	11	,,
Older	12	,,

1759 to 1765. October. Newmarket, so-called weight scale according to age for distance, B. C.=about 4 miles.

			Difference
4 year-olds	6 stone,	11 lbs.	1 stone, 7 lbs.
5 year-olds	8 ,,	4 ,,	1 stone.
6 year-olds	9 ,,	4 ,,	
Older	10 ,,	— ,,	10 lbs.

1766. So-called weight scale according to age at Newmarket. October. Distance, B. C.=4 miles.

			Difference
4 year-olds	7 stone,	7 lbs.	1 stone, 2 lbs.
5 year-olds	8 ,,	9 ,,	12 lbs.
6 year-olds	9 ,,	7 ,,	
Older	10 ,,	— ,,	7 lbs.

At the establishing of the Gold Cup in 1768 at Newmarket, to be run in October, over 4 miles, the weights were :

			Difference
4 year-olds	7 stone,	— lbs.	1 stone, 5 lbs.
5 year-olds	8 ,,	5 ,,	12 lbs.
6 year-olds	9 ,,	3 ,,	
Older	9 ,,	10 ,,	7 lbs.

At that time there was no universally accepted scale of weights, and the following examples show the average differences in weights in 1775 :

In July, at Newmarket, over 2 miles:

	Weight			Difference
3 year-olds	6 stone,	11	lbs.	1 stone, 2 lbs.
4 year-olds	7 ,,	13	,,	12 lbs.
5 year-olds	8 ,,	9	,,	5 lbs.
6 year-olds	9 ,,	—	,,	2 lbs.
Older	9 ,,	2	,,	

In August, at Newmarket, over 4 miles:

	Weight			Difference
3 year-olds	6 stone,	—	lbs.	1 stone, 7 lbs.
4 year-olds	7 ,,	7	,,	11 lbs.
5 year-olds	8 ,,	4	,,	8 lbs.
6 year-olds	8 ,,	12	,,	5 lbs.
Older	9 ,,	3	,,	

In October, at Newmarket, over 4 miles:

	Weight			Difference
4 year-olds	7 stone,	3	lbs.	1 stone, 2 lbs.
5 year-olds	8 ,,	5	,,	9 lbs.
6 year-olds	9 ,,	—	,,	5 lbs.
Older	9 ,,	5	,,	

Hereafter the differences in weight were, on the average, about as follows:

1775.

Ages	Difference
3 year-olds – 4 year-olds	1 stone, 2 lbs. to 1 stone, 7 lbs.
4 year-olds – 5 year-olds	10 lbs. to 1 stone, 5 lbs.
5 year-olds – 6 year-olds	5 lbs. to 1 stone, 2 lbs.
6 year-olds – Older	2 lbs. to 8 lbs.

1800.

Ages	Difference
2 year-olds – 3 year-olds	1 stone, 12 lbs. to 2 stone, 2 lbs.
3 year-olds – 4 year-olds	1 stone to 2 stone.
4 year-olds – 5 year-olds	7 lbs. to 1 stone, 2 lbs.
5 year-olds – 6 year-olds	4 lbs. to 10 lbs.
6 year-olds – Older	2 lbs. to 6 lbs.

1830.

Ages	Difference
2 year-olds – 3 year-olds	1 stone, 12 lbs. to 2 stone, 3 lbs.
3 year-olds – 4 year-olds	1 stone to 2 stone.
4 year-olds – 5 year-olds	7 lbs. to 1 stone, 1 lb.
5 year-olds – 6 year-olds	2 lbs. to 9 lbs.
6 year-olds – Older	0 to 3 lbs.

1850.

2 year-olds, 3 year-olds	1 stone, 12 lbs. to 2 stone, 3 lbs.
3 year-olds, 4 year-olds	1 stone, 4 lbs. to 2 stone, 6 lbs.
4 year-olds, 5 year-olds	7 lbs. to 10 lbs.
5 year-olds, 6 year-olds	2 lbs. to 6 lbs.
6 year-olds, Older	0 to 1 lb.

1900.

2 year-olds, 3 year-olds	1 stone, 1 lb. to 2 stone, 5 lbs.
3 year-olds, 4 year-olds	1 lb. to 1 stone, 13 lbs.
4 year-olds, 5 year-olds	0 to 8 lbs.
5 year-olds, Older	0.

On page 35 is given the weight scale worked out by Admiral Rous in 1873. This scale has been frequently altered, and holds good at the present time. From 1832 the weights for the King's Plates were fixed for the different racing places in the Racing Calendar. At Newmarket alone were the weights for the King's Plates fixed by the Stewards. In the Racing Calendar for 1861 appeared for the first time the universally accepted weight scale for the King's Plates, which we give below. It was not until 1881 that the first copy of the weight scale worked out by Admiral Rous appeared in the Racing Calendar. A special table is given herewith for comparison of the weights from 1881 and of those from 1906.

Weight Scale for the King's Plates, 1861.

Age	March and April		May		June		July		August		September		October		November	
2 Miles and less than 2¼ Miles.																
3 year-olds	7	9	7	11	8	0	8	3	8	5	8	7	8	8	8	9
4 year-olds	9	7	9	7	9	7	9	7	9	7	9	7	9	7	9	7
5 year-olds	10	0	10	0	9	13	9	12	9	12	9	12	9	11	9	11
6 year-olds and older ...	10	2	10	2	10	0	9	13	9	12	9	12	9	11	9	11
2¼ Miles and less than 3 Miles.																
3 year-olds	7	8	7	9	7	10	7	13	8	1	8	3	8	5	8	5
4 year-olds	9	7	9	7	9	7	9	7	9	7	9	7	9	7	9	7
5 year-olds	10	1	10	1	10	1	10	0	9	13	9	13	9	12	9	12
6 year-olds and older ...	10	4	10	3	10	2	10	1	10	0	10	0	9	13	9	12
3 Miles and less than 3½ Miles.																
3 year-olds	7	7	7	8	7	11	8	0	8	2	8	4	8	6	8	6
4 year-olds	9	7	9	7	9	7	9	7	9	7	9	7	9	7	9	7
5 year-olds	10	2	10	2	10	1	10	1	10	0	10	0	9	13	9	13
6 year-olds and older ...	10	5	10	4	10	3	10	2	10	1	10	1	10	0	9	13
3½ and more Miles.																
3 year-olds	7	3	7	4	7	6	7	9	7	11	7	13	8	1	8	2
4 year-olds	9	7	9	7	9	7	9	7	9	7	9	7	9	7	9	7
5 year-olds	10	4	10	4	10	3	10	2	10	2	10	1	10	0	10	0
6 year-olds and older ...	10	8	10	7	10	6	10	5	10	4	10	3	10	2	10	1

Weight Table, 1906.

Distance	Age	March and April		May		June		July		August		September		October		November	
5 Furlongs	2 years	6	0	6	2	6	7	6	10	7	2	7	7	7	9	7	12
	3 years	8	4	8	3	8	5	8	7	8	9	8	12	8	12	8	13
	4 years	9	4	9	0	9	0	9	0	9	0	9	0	9	0	9	0
	5, 6 and older ...	9	5	9	0	9	0	9	0	9	0	9	0	9	0	9	0
6 Furlongs	2 years	—		6	4	6	7	6	11	7	0	7	6	7	9	7	13
	3 years	8	5	8	6	8	8	8	10	8	12	9	0	9	2	9	3
	4 years	9	7	9	7	9	7	9	7	9	7	9	7	9	7	9	7
	5, 6 and older ...	9	9	9	8	9	7	9	7	9	7	9	7	9	7	9	7
1 Mile	2 years	—		—		—		—		—		6	7	6	9	6	12
	3 years	7	8	7	11	7	13	8	2	8	4	8	6	8	7	8	8
	4 years	9	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0
	5, 6 and older ...	9	4	9	3	9	2	9	0	9	0	9	0	9	0	9	0
1⅓ Miles	2 years	—		—		—		—		—		6	0	6	4	6	7
	3 years	7	7	7	9	7	11	7	13	8	1	8	3	8	5	8	7
	4 years	9	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0
	5, 6 and older ...	9	5	9	4	9	3	9	2	9	1	9	0	9	0	9	0
2 Miles	2 years	—		—		—		—		—		6	0	6	2	6	2
	3 years	7	8	7	11	7	12	8	0	8	3	8	4	8	5	8	5
	4 years	9	4	9	4	9	4	9	4	9	4	9	4	9	4	9	4
	5, 6 and older ...	9	10	9	9	9	8	9	7	9	6	9	5	9	4	9	4
3 Miles	3 years	7	1	7	4	7	5	7	7	7	9	7	11	7	13	7	13
	4 years	9	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0
	5 years	9	8	9	7	9	6	9	5	9	5	9	4	9	3	9	3
	6 and older ...	9	10	9	8	9	7	9	6	9	5	9	4	9	3	9	3

Comparison of the Weight Differences according to the Scale from 1881 and 1906.

Distance	Between	March and April				May				June				July			
		1881		1906		1881		1906		1881		1906		1881		1906	
		st.	lbs.	st.	lbs.	st.	lbs.	st.	lbs.	st.	lbs.	st.	lbs.	st.	lbs.	st.	lbs.
5 Furlongs	2—3 year-olds	2	2	2	4	2	1	2	1	1	12	2	2	1	12	1	11
	3—4 year-olds		12	1			11		11		9		9		7		7
	4—5 and others		1		1		0		0		0		0		0		0
6 Furlongs	2—3 year-olds	2	1	—		2	2	2	2	2	1	2	1	2	1	1	13
	3—4 year-olds	1	3	1	2	1	1	1	1		13		13		11		11
	4—5 and others		2		2		1		1		0		0		0		0
1 Mile	2—3 year-olds	—		—		—		—		—		—		—		—	
	3—4 year-olds	1	5	1	6	1	3	1	3	1	1	1	1		12		12
	4—5 and others		1		4		3		3		2		2		0		0
1½ Miles	2—3 year-olds	—		—		—		—		—		—		—		—	
	3—4 year-olds	1	7	1	7	1	5	1	5	1	3	1	3	1	1	1	1
	4—5 and others		5		5		4		4		3		3		2		2
2 Miles	2—3 year-olds	—		—		—		—		—		—		—		—	
	3—4 year-olds	1	10	1	10	1	7	1	7	1	6	1	6	1	4	1	4
	4—5 and others		6		6		5		5		4		4		3		3
3 Miles	3—4 year-olds	1	13	1	13	1	10	1	10	1	9	1	9	1	7	1	7
	4—5 year-olds		8		8		7		7		6		6		5		5
	5—6 and others		2		2		1		1		1		1		1		1

Distance	Between	August				September				October				November			
		1881		1906		1881		1906		1881		1906		1881		1906	
		st.	lbs.	st.	lbs.	st.	lbs.	st.	lbs.	st.	lbs.	st.	lbs.	st.	lbs.	st.	lbs.
5 Furlongs	2—3 year-olds	1	9	1	7	1	6	1	5	1	4	1	3	1	4	1	1
	3—4 year-olds		5		5		4		2		3		2		3		1
	4—5 and others		0		0		0		0		0		0		0		0
6 Furlongs	2—3 year-olds	1	12	1	12	1	9	1	8	1	9	1	7	1	9	1	4
	3—4 year-olds		9		9		7		7		5		5		5		4
	4—5 and others		0		0		0		0		0		0		0		0
1 Mile	2—3 year-olds	—		—		2		1	13	1	13	1	12	1	13	1	10
	3—4 year-olds		10		10		9		8		8		7		8		6
	4—5 and others		0		0		0		0		0		0		0		0
1½ Miles	2—3 year-olds	—		—		2	3	2	3	2	1	2	1	2	1	2	
	3—4 year-olds		13		13		10		10		9		9		9		7
	4—5 and others		1		1		0		0		0		0		0		0
2 Miles	2—3 year-olds	—		—		2	4	2	4	2	3	2	3	2	3	2	3
	3—4 year-olds	1	1	1	1	1		1			13		13		13		13
	4—5 and others		2		2		1		1		0		0		0		0
3 Miles	3—4 year-olds	1	5	1	5	1	3	1	3	1	1	1	1	1	1	1	1
	4—5 year-olds		5		5		4		4		3		3		3		3
	5—6 and others		0		0		0		0		0		0		0		0

In order to arrive at a fair comparison of the weights carried formerly with those carried at the present time, hereafter will be given the weights for definite yearly periods, distances, seasons, and, of course, only for races without heats.

The first race for two-year-olds and older horses in November, 1773, at Newmarket, distance D. J.=about 2 miles, stipulated as weight for two-year-olds, 4 stone, 8 lbs., and for three-year-olds, 6 stone, 7 lbs., that is, a difference of 1 stone, 13 lbs. According to to-day's scale the difference would be 4 lbs. more, *i.e.*, 2 stone, 3 lbs. It is very interesting to note how exactly, even at that time, the capabilities of the two-year-olds were valued against those of the three-year-olds. For further comparison of the weights for two-year-olds, as well as three-year-olds, the following examples will serve:—

1777. October. Newmarket. Distance $\frac{3}{4}$ mile Ab. M.=6 furlongs.
3 year-old, 8 stone (won). } Difference,
2 year-old, 6 stone, 8 lbs. } 1 stone, 6 lbs.
According to the present day scale: 1 stone, 7 lbs.

1777. October. Newmarket. Distance Ab. M.=1 mile.
3 year-olds, 8 stone. } Difference,
2 year-olds, 6 stone, 8 lbs. (paid forfeit). } 1 stone, 6 lbs.
According to the present day scale: 1 stone, 12 lbs.

1781. October. Newmarket. Distance $\frac{1}{2}$ R. M.=4 furlongs.
2 year-old, Assassin, 7 stone (won). } Difference,
3 year-old, Puzzle, 8 stone, 3 lbs. } 1 stone, 6 lbs [1]
According to present day scale: about 1 stone, 1 lb.

Assassin, winner of the next year's Derby, and the three-year-old, Puzzle, were racing horses of almost equal value, and Puzzle won directly afterwards the—at that time—classical Perram Stakes at Newmarket.

1800. October. Newmarket. Distance D. J.=about 2 miles.
Difference in weight between 2 and 3 year-olds, 1 stone, 12 lbs.
,, ,, according to to-day's scale, 2 stone, 3 lbs.

1809. July. Newmarket. Distance 2 Y. O. C.=5 furlongs, 136 yards.
Difference in weight between 2 and 3 year-olds, 2 stone, 2 lbs.
,, ,, according to to-day's scale, 1 stone, 13 lbs.

1800. October. Newmarket. Distance, 2 Y.O.C.=5 furlongs, 136 yds.
Difference in weight between 2 and 3 year-olds, 1 stone, 7 lbs.
,, ,, according to to-day's scale, 1 stone, 7 lbs.

1800. October. Newmarket. Distance D. J.=about 2 miles.
Difference in weight between 2 and 3 year-olds, 1 stone, 12 lbs.
,, ,, according to to-day's scale, 2 stone, 3 lbs.

[1] Taking into consideration the usual 3-lbs. allowed for fillies.

1830. July. Liverpool. Distance 2 Y. O. C. = about 5 furlongs.
Difference in weight between 2 and 3 year-olds, 2 stone, 2 lbs.
,, ,, according to to-day's scale, 1 stone, 11 lbs.

1830. September. Doncaster. Distance 1½ miles.
Difference in weight between 2 and 3 year-olds, 2 stone, 4 lbs.
,, ,, according to to-day's scale, 2 stone, 3 lbs.

1850. July. Goodwood. Distance 2 Y. O. C. = 6 furlongs.
Difference in weight between 2 and 3 year-olds, 2 stone, 2 lbs.
,, ,, according to to-day's scale, 1 stone, 13 lbs.

1850. July. Liverpool. Distance 2 Y. O. C. = about 5 furlongs.
Difference in weight between 2 and 3 year-olds, 2 stone.
,, ,, according to to-day's scale, 1 stone, 11 lbs.

1850. September. Doncaster. Dist. Red House = 5 furlongs, 152 yds.
Difference in weight between 2 and 3 year-olds, 2 stone.
,, ,, according to to-day's scale, 1 stone, 8 lbs.

1850. October. Newmarket. Distance 1 mile.
Difference in weight between 2 and 3 year-olds, 2 stone, 4 lbs.
,, ,, according to to-day's scale, 1 stone, 12 lbs.

1850. October. Newmarket. Dist. 2 Y. O. C. = 5 furlongs, 136 yards.
Difference in weight between 2 and 3 year-olds, 1 stone, 11 lbs.
,, ,, according to to-day's scale, 1 stone, 7 lbs.

1850. October. Newmarket. Distance ½ Ab. M. = 4 furlongs.
Difference in weight between 2 and 3 year-olds, 1 stone, 10 lbs.
,, ,, according to to-day's scale, 1 stone, 1 lb.

1850. October. Curragh. Distance Red Post = 1 mile, 6 fur., 3 yds.
Difference in weight between 2 and 3 year-olds, 2 stone, 11 lbs.
,, ,, according to to-day's scale, 2 stone, 2 lbs.

For comparing three and four-year-olds the following examples will serve:—

1775. April. Newmarket. Craven Stakes. Distance 1 mile, 2 furlongs, 44 yards.
Difference in weight between 3 and 4 year-olds, 1 stone, 7 lbs.
,, ,, according to to-day's scale, 1 stone, 7½ lbs.

1775. July. Newmarket. Distance 2 miles.
Difference in weight between 3 and 4 year-olds, 1 stone, 2 lbs.
,, ,, according to to-day's scale, 1 stone, 4 lbs.

1775. August. Newmarket. Distance 4 miles.
Difference in weight between 3 and 4 year-olds, 1 stone, 7 lbs.
,, ,, according to to-day's scale, 1 stone, 9 lbs.

1800. April. Newmarket. Craven Stakes. Distance 1 mile, 2 furlongs, 44 yards.
Difference in weight between 3 and 4 year-olds, 2 stone.
,, ,, according to to-day's scale, 1 stone, 7½ lbs.

1800. May. Newmarket. Distance 2 miles.
Difference in weight between 3 and 4 year-olds, 1 stone, 12 lbs.
,, ,, according to to-day's scale, 1 stone, 7 lbs.

1800. July. Newmarket. Distance D. J.=about 2 miles.
Difference in weight between 3 and 4 year-olds, 1 stone, 5 lbs.
,, ,, according to to-day's scale, 1 stone, 4 lbs.

1800. July. Stockbridge. Distance=2 miles.
Difference in Weight between 3 and 4 year-olds, 1 stone, 3 lbs.
,, ,, according to to-day's scale, 1 stone, 4 lbs.

1800. July. Stamford. Gold Cup. Distance=4 miles.
Difference in weight between 3 and 4 year-olds, 1 stone, 7 lbs.
,, ,, according to to-day's scale, 1 stone, 10 lbs.

1800. August. Ireland. Distance=4 miles.
Difference in weight between 3 and 4 year-olds, 1 stone, 3 lbs.
,, ,, according to to-day's scale, 1 stone, 9 lbs.

1800. October. Newmarket. Distance=2 miles.
Difference in weight between 3 and 4 year-olds, 1 stone.
,, ,, according to to-day's scale, 13 lbs.

1807. June. Ascot. Gold Cup. Distance=2½ miles.
Difference in weight between 3 and 4 year-olds, 1 stone, 4 lbs.
,, ,, according to to-day's scale, 1 stone, 7½ lbs.

1830. April. Newmarket. Craven Stakes. Distance 1 mile, 2 furlongs, 44 yards.
Difference in weight between 3 and 4 year-olds, 2 stone, 4 lbs.
,, ,, according to to-day's scale, 1 stone, 7½ lbs.

1830. May. Liverpool. Distance=2 miles.
Difference in weight between 3 and 4 year-olds, 1 stone, 6 lbs.
,, ,, according to to-day's scale, 1 stone, 7 lbs.

1830. May. Epsom. Craven Stakes. Distance=1¼ miles.
Difference in weight between 3 and 4 year-olds, 2 stone.
,, ,, according to to-day's scale, 1 stone, 4 lbs.

1830. June. Ascot. Gold Cup. Distance 2½ miles.
Difference in weight between 3 and 4 year-olds, 1 stone, 6 lbs.
,, ,, according to to-day's scale, 1 stone, 7½ lbs.

1830. June. Manchester. Gold Cup. Distance 2 miles.
Difference in weight between 3 and 4 year-olds, 1 stone, 13 lbs.
,, ,, according to to-day's scale, 1 stone, 6 lbs.

1830. July. Liverpool. Croxteth Stakes. Distance 1¼ miles.
Difference in weight between 3 and 4 year-olds, 1 stone, 8 lbs.
,, ,, according to to-day's scale, 1 stone, 1 lb.

1830. August. York. Distance 2 miles.
Difference in weight between 3 and 4 year-olds, 1 stone, 2 lbs.
,, ,, according to to-day's scale, 1 stone, 1 lb.

1830. September. Doncaster. Cup. Distance 2 miles, 5 furlongs.
Difference in weight between 3 and 4 year-olds, 1 stone, 3 lbs.
,, ,, according to to-day's scale, 1 stone, 1½ lbs.

1830. October. Epsom. Metropolitan Stakes. Distance 1½ miles.
Difference in weight between 3 and 4 year-olds, 1 stone, 4 lbs.
,, ,, according to to-day's scale, 9 lbs.

1850. April. Newmarket. Craven Stakes. Distance 1 mile, 2 furlongs, 44 yards.
Difference in weight between 3 and 4 year-olds, 1 stone, 12 lbs.
,, ,, according to to-day's scale, 1 stone, 7½ lbs.

1850. May. Epsom. Craven Stakes. Distance 1¼ miles.
Difference in weight between 3 and 4 year-olds, 2 stone, 2 lbs.
,, ,, according to to-day's scale, 1 stone, 4 lbs.

1850. June. Ascot. Gold Cup. Distance 2½ miles.
Difference in weight between 3 and 4 year-olds, 1 stone, 9 lbs.
,, ,, according to to-day's scale, 1 stone, 7½ lbs.

1850. July. Liverpool. Croxteth Stakes. Distance 1¼ miles.
Difference in weight between 3 and 4 year-olds, 1 stone, 8 lbs.
,, ,, according to to-day's scale, 1 stone, 1 lb.

1850. September. Doncaster. Cup. Distance 2 miles, 5 furlongs.
Difference in weight between 3 and 4 year-olds, 1 stone, 5 lbs.
,, ,, according to to-day's scale, 1 stone, 1½ lbs.

1850. October. Newmarket. Distance, T. Y. O. C. = 5 furl., 136 yds.
Difference in weight between 3 and 4 year-olds, 7 lbs.
,, ,, according to to-day's scale, 4 lbs.

Those examples, which may serve as a comparison, are, especially in the years before 1850, often difficult to gather, as most races then were run with heats, and are therefore unsuitable as comparisons with the present time, and because only few races were set apart for horses of each age. The many Handicaps for horses of each age are very difficult to manipulate as comparisons. From above examples one easily can see, however, that the weight difference between two and three-year-olds as well as between three and four-year-olds was, up to the year 1800, nearly according to the present scale of weights, and that they often were somewhat smaller for longer distances. From 1800 to about 1850 these weight differences increased somewhat, viz.: The differences between two and three-year-olds less (about 2-7 lbs.), those between three and four-year-olds somewhat more (about 3-11 lbs.). In other words, the proportion of weight carrying capability has been approximately the same up to about 1800 as it is to-day for two, three and

four-year-olds, whilst after about 1800 up to about 1850 the three-year-olds and the four-year-olds especially were expected to carry more, according to the table just quoted. It appears that the races for two-year-olds, which took place at that time in a reduced degree, and not too early in the year (which races became popular after Assassin's Derby victory, 1782), improved the capabilities (Leistungsfähigkeit) of the future three and four-year-olds, whilst after about 1850 the increase of races for two-year-olds, especially in the early part of the year, seems to have annulled gradually this favourable effect.

The changes of weight differences between four-year-olds and older horses are shown by the following examples, in their historic development:—

1775. April. Newmarket. Craven Stakes. Distance 1 mile, 2 furlongs, 44 yards.

	Difference in weight:	According to present scale:
4 year-olds / 5 year-olds	9 lbs.	4½ lbs.
5 year-olds / 6 year-olds	6 ,,	0 ,,
6 year-olds / 7 year-olds	4 ,,	0 ,,
7 year-olds / Older	2 ,,	0 ,,

1792. July. Newmarket. Distance 2 miles.

	Difference in weight:	According to present scale:
4 year-olds / 5 year-olds	10 lbs.	3 lbs.
5 year-olds / 6 year-olds	5 ,,	0 ,,
6 year-olds / Older	2 ,,	0 ,,

1792. October. Newmarket. Distance 2 miles.

	Difference in weight:	According to present scale:
4 year-olds / 5 year-olds	12 lbs.	0 lbs.
5 year-olds / 6 year-olds	6 ,,	0 ,,
6 year-olds / Older	3 ,,	0 ,,

1792. October. Newmarket. Gold Cup. Distance 4 miles.

	Difference in weight:	According to present scale:
4 year-olds / 5 year-olds	11 lbs.	6 lbs.
5 year-olds / 6 year-olds	5 ,,	0 ,,
6 year-olds / Older	1 ,,	0 ,,

1800. June. Ascot. Distance 2½ miles.

	Difference in weight:	According to present scale:
4 year-olds / 5 year-olds	10 lbs.	5 lbs.
5 year-olds / 6 year-olds	6 ,,	0 ,,
6 year-olds / Older	3 ,,	0 ,,

1800. July. Newmarket. Distance 2 miles.

	Difference in weight:	According to present scale:
4 year-olds	9 lbs.	3 lbs.
5 year-olds, 6 year-olds	10 ,,	0 ,,
Older	4 ,,	0 ,,

1800. October. Newmarket. Distance 2 miles.

	Difference in weight:	According to present scale:
4 year-olds	7 lbs.	0 lbs.
5 year-olds, 6 year-olds	4 ,,	0 ,,
Older	0 ,,	0 ,,

1807. April. Newmarket. Craven Stakes. Distance 1 mile, 2 furlongs, 44 yards.

	Difference in weight:	According to present scale:
4 year-olds	9 lbs.	4½ lbs.
5 year-olds, 6 year-olds	6 ,,	0 ,,
6 year-olds, 7 year-olds	4 ,,	0 ,,
Older	2 ,,	0 ,,

1807. June. Ascot. Gold Cup. Distance 2½ miles.

	Difference in weight:	According to present scale:
4 year-olds	10 lbs.	5 lbs.
5 year-olds, 6 year-olds	6 ,,	0 ,,
Older	0 ,,	0 ,,

1830. April. Newmarket. Craven Stakes. Distance 1 mile, 2 furlongs, 44 yards.

	Difference in weight:	According to present scale:
4 year-olds	9 lbs.	4½ lbs.
5 year-olds, 6 year-olds	6 ,,	0 ,,
Older	4 ,,	0 ,,

1830. May. Epsom. Craven Stakes. Distance 1¼ miles.

	Difference in weight:	According to present scale:
4 year-olds	9 lbs.	3½ lbs.
5 year-olds, 6 year-olds	7 ,,	0 ,,
Older	3 ,,	0 ,,

1830. June. Ascot. Gold Cup. Distance 2½ miles.

	Difference in weight:	According to present scale:
4 year-olds	10 lbs.	5 lbs.
5 year-olds, 6 year-olds	5 ,,	0 ,,
Older	0 ,,	0 ,,

1830. June. Manchester. Gold Cup. Distance 2 miles.

	Difference in weight:	According to present scale:
4 year-olds	8 lbs.	4 lbs.
5 year-olds, 6 year-olds	4 ,,	0 ,,
Older	0 ,,	0 ,,

1830. August. York. Distance 2 miles.

	Difference in weight:	According to present scale.
4 year-olds	8 lbs.	2 lbs.
5 year-olds, 6 year-olds	4 ,,	0 ,,
Older	0 ,,	0 ,,

1830. September. Doncaster. Gold Cup. Distance 2 miles, 5 furlongs.

	Difference in weight:	According to present scale:
4 year-olds	7 lbs.	3 lbs.
5 year-olds, 6 year-olds	4 ,,	0 ,,
Older	0 ,,	0 ,,

1830. October. Newmarket. Distance 1 mile, 2 furlongs, 44 yards.

	Difference in weight:	According to present scale:
4 year-olds	7 lbs.	0 lbs.
5 year-olds, 6 year-olds	4 ,,	0 ,,
Older	0 ,,	0 ,,

1850. April. Newmarket. Craven Stakes. Distance 1 mile, 2 furlongs, 44 yards.

	Difference in weight:	According to present scale:
4 year-olds	9 lbs.	4½ lbs.
5 year-olds, 6 year-olds	6 ,,	0 ,,
Older	0 ,,	0 ,,

1850. May. Epsom. Craven Stakes. Distance 1¼ miles.

	Difference in weight:	According to present scale:
4 year-olds	8 lbs.	3½ lbs.
5 year-olds, 6 year-olds	6 ,,	0 ,,
Older	0 ,,	0 ,,

1850. June. Ascot. Gold Cup. Distance 2½ miles.

	Difference in weight:	According to present scale:
4 year-olds	9 lbs.	5 lbs.
5 year-olds, 6 year-olds	3 ,,	0 ,,
Older	0 ,,	0 ,,

1850. September. Doncaster. Gold Cup. Distance 2 miles, 5 furlongs.

	Difference in weight:	According to present scale:
4 year-olds	7 lbs.	3 lbs.
5 year-olds 6 year-olds	4 ,,	0 ,,
Older	0 ,,	0 ,,

1850. October. Newmarket. Distance 1 mile, 2 furlongs, 44 yards.

	Difference in weight:	According to present scale:
4 year-olds	5 lbs.	0 lbs.
5 year-olds 6 year-olds	0 ,,	0 ,,
Older	0 ,,	0 ,,

1851. May. York. Match. Distance 2 miles.

	Difference in weight:	According to present scale:
4 years Voltigeur, 8 st. 5 years Flying Dutchman, 8 st., 8½ lbs. (won)	8½ lbs.	5 lbs.

It is difficult to compile examples of the King's Plates which can be of any use, as most of the King's Plates were formerly run with heats, and those without heats were only held for horses of the same age. The few suitable examples which follow will suffice, however, for our purpose:—

1820. August. York. Distance 4 miles.

	Difference in weight:	Difference in weight as per scale of 1861	and 1881
4 year-olds	1 stone, 2 lbs.	9 lbs.	5 lbs.
5 year-olds 6 year-olds	8 ,,	2 ,,	0 ,,
Older	2 ,,	0 ,,	0 ,,

1832 to 1850. May and June, in Chester, Ascot and Manchester. Distance 3 miles.

	Difference in weight:	Difference in weight as per scale of 1861	and 1881
3 year-olds 4 year-olds	2 stone	10—13 lbs.	9—10 lbs.
4 year-olds 5 year-olds	12 lbs.	8—9 ,,	6—7 ,,
5 year-olds 6 year-olds and older	5 lbs.	2 ,,	1 ,,

1850. August. York. Distance 2 miles.

	Difference in weight:	Difference in weight as per scale of 1861	and 1881
3 year-olds	1 stone, 3 lbs.	1 stone, 2 lbs.	1 stone, 1 lbs.
4 year-olds 5 year-olds	6 ,,	5 ,,	2 ,,
5 year-olds 6 year-olds	3 ,,	0 ,,	0 ,,
6 year-olds Older	2 ,,	0 ,,	0 ,,

From these weight differences it can be seen that the abilities of four, five and six-year-olds changed very little up to 1850. An improvement of horses, on the other hand, after six years old ceases gradually altogether. In other words, the influence caused by two-year-old races and mentioned on page 42 with the weight-differences between two, three and four-year-olds, has not affected the carrying capacity of four, five and six-year-olds, but has stopped the further improvement of six-year-olds. Accordingly horses at six years old reached the height of their capabilities (Leistungsfähigkeit).

The preservation of the capabilities of four, five and six-year-olds up to 1850 in the same proportion to each other (in spite or in consequence of the two-year-old races) is all the more remarkable, as in the same time (shown above) a progress in the development of three-year-olds, and still more of four-year-olds, must be assumed on account of the weight differences. From this we might suppose that the improved four-year-old would more closely approach the five-year-old and older horses, which ought to be seen by a diminution in the weight differences. As up to about 1850 this diminution did not take place, the continued improvement of five-year-old and older horses must be all the more appreciated. After 1850, or even later, the frequent and very early two-year-old races seem also here to have impeded the favourable development of horses after their fourth year.

As a further example to confirm above conclusions, let me here mention the Thoroughbred Fitzwilliam Stakes, at Doncaster.

This race was founded in 1807, and set apart for two-year-olds and older horses, over a course of 1½ miles, with the following weights:

		Difference in weight:	According to present scale:
2 year-olds	6 stone.	2 stone.	2 stone, 3 lbs.
3 year-olds	8 ,,	9 lbs.	11 lbs.
4 year-olds	8 ,, 9 lbs.	6 ,,	0 ,,
5 year-olds	9 ,, 1 ,,	4 ,,	0 ,,
6 year-olds	9 ,, 5 ,,	2 ,,	0 ,,
Older	9 ,, 7 ,,		

Two-year-olds in this proportionately long distance of 1½ miles had no chance (Oiseau was in 1811 the only two-year-old winner). Therefore the following changes were arranged in 1826:—

		Difference in weight:
2 year-olds	5 stone, 10 lbs.	2 stone, 4 lbs.
3 year-olds	8 ,, — ,,	1 ,,
4 year-olds	9 ,, — ,,	6 lbs.
5 year-olds	9 ,, 6 ,,	4 ,,
6 year-olds and older	9 ,, 10 ,,	

The weight difference between two and three-year-olds is here only 1 lb. more than according to present scale. In this race from 1834 two-year-olds are left out. The weight difference of 1 stone (11 lbs. to-day) between three and four-year-olds remained stationary till the race became a Handicap in

1850. The weight difference, however, between four and five-year-olds increased in 1834 to 6 lbs., in 1838 to even 12 lbs., and decreased in 1839 to 7 lbs., whilst according to the present day scale the difference is nil. The weight difference between five and six-year-olds in 1834 came down to 2 lbs., and remained so to 1850.

In the celebrated race between the three-year-old, Voltigeur, with 7 stone, 7 lbs. up, and the four-year-old, Flying Dutchman, carrying 8 stone, 12 lbs., over a course of 2½ miles, in the Doncaster Cup, on the 20th of September, 1850, there was a weight difference of 1 stone, 5 lbs., against 1 stone, 1½ lbs. of the present scale. In the year later, in that well known match of the 13th of May, 1851, at York, over a distance of 2 miles, the four-year-old, Voltigeur, carried 8 stone, the five-year-old, Flying Dutchman, 8 stone, 8½ lbs. The weight difference was therefore 8½ lbs., against 5 lbs. according to present scale. There was each time a close finish. In the Doncaster Cup, Voltigeur won by half a length, and in the Match, Flying Dutchman won by one length. We may, therefore, assume that the then existing weight differences corresponded with the average capabilities of three, four and five-year-olds.

Therefrom follows that the present four and five-year-old racehorses are each 3½ lbs. worse than those in the middle of last century.

Against these conclusions one may, however, answer that it is just in consequence of the many and early two-year-old races, as well as in consequence of the progress made in the art of training in the second half of the nineteenth century, that the weight carrying capability of two and three-year-olds has been much improved, and that, therefore, three-year-olds have almost approximately reached that point of weight carrying capability which was formerly only held by five and six-year-olds.

The consequences, therefore, would of course be that the four-year-old and older horses could not improve in such proportion as to justify the greater weight differences which were formerly extant. Therefore, the weight differences between three, four and five-year-olds must become less. In other words, the zero point from which we count, *i.e.*, the weight carrying capability of two and three-year-olds, would become much higher. If this were so, then, with the assumed quicker and better development of two and three-year-olds, the weight difference between these two ages ought also to have become larger. This, however, it is remarkable to have to say, is not so. In the gradual building of the weight scale, one point is very noticeable: that the weight differences between two and three-year-olds are almost the same to-day as they were at the end of the eighteenth century, when two-year-old races were just beginning. On the other hand, the above-mentioned increase of weight differences of 2-7 lbs. between two and three-year-olds speaks for itself for the healthy development of two-year-olds in the years from about 1800 to 1850. Furthermore, it is very doubtful whether the present two and three-year-olds are really better than they were in the middle

of the nineteenth century. We have no proof of this. Such horses as Touchstone, Cotherstone, Orlando, The Baron, Surplice, Flying Dutchman, Voltigeur, Stockwell, West Australian, Fisherman, Blink Bonny, Thormanby, etc., are they really worse horses than our present day champions? All these said racehorses yet belonged to those times in which there approximately existed for different ages that difference of weight which we have mentioned above for 1850.

Finally, we have only to deal with one point, namely, that two-year-olds themselves are much better than they were before. If this really be the case to such a great extent as to justify the above mentioned large weight differences, then the progress in the average records of time should be more remarkable than the comparisons show hereafter. As the weight difference between two and three-year-olds as above-said are the same as they were one hundred years ago, the records of three-year-olds suffice for comparison. The increase of weight differences between two and three-year-olds after 1800 has been shown above to be a result of the improvement of three-year-olds, probably in consequence of the races for two-year-olds.

There is yet the possibility that the two-year-olds became worse. and that, therefore, the weight differences could rise. There is, however, no plausible reason for this possibility, whilst the assumed improvement of three-year-olds, through training and racing as two-year-olds, appears very probable. It is, rather, to be assumed that as everything improves, two-year-olds also improve in course of time. This, however, need not be at the expenses of three-year-olds.

In breeding, where only two-year-olds improve, one can hardly speak of a general progress. I seem, therefore, to be justified, for the sake of comparisons, in taking the capabilities of two-year-olds as a standard, although an improvement, however slow, in the course of time is desirable, and also appears probable.

The weight differences in the scale for King's Plates from the year 1861 are, as can be seen by comparison, considerably higher than to-day. The weight differences of the first weight scale of Admiral Rous of 1881, compared with those of the scale of 1906, show, as can be seen from the figures of the table printed in larger type, that also in the last twenty-five years, a diminution of weight differences has taken place.

If one takes, therefore, the capabilities of two-year-olds as a standard, in comparing with the capabilities of other ages, one must consider the diminution of weight differences always as a sign of deterioration of stock.

According to above comparisons of weight differences in 1861, 1881 and 1906, from 1861 a gradual deterioration of stock appears probable if looked at from this standpoint.

Even if the pretended greater capabilities of present two and three-year-olds were approximately right, there still remains a grave doubt whether the

lessened development capability of four-year-olds and older horses has also produced a lesser resisting power, as we show later on, in the chapter on the capabilities of the Thoroughbred formerly and now.

Taken altogether, these observations justify us in assuming that, considered from the standpoint of the altered weight differences, the improvement of racehorses took place about up to the middle of the nineteenth century, and also specially, that a favourable development of four-year-old and older horses up to the sixth year existed. Furthermore, that simultaneously with the frequent occurrence of races for two-year-olds partly in the beginning of the year, and with the existence of the many short Handicaps, a retrogression of the development of racehorses after their third year began soon after the second half of the nineteenth century. The time in which the number of two-year-old racehorses began to exceed the number of three-year-olds, denotes the turning point.

CHAPTER IV.

General Observations on the Value of the Thoroughbred for other breeds.

THE prominent position occupied by the Thoroughbred in the breeding of half-bred horses[1] has no equivalent in the breeding of any other animal. Breeding carried on for two hundred years and for a set purpose, as it has been done in England and Ireland, where soil and climate constitute an environment admirably adapted to horse-breeding, has produced the Thoroughbred of the present day. Breeders of other animals have also done great things in the same time, but in the breeding of horses one very great factor has co-operated which is more or less absent in the breeding of other animals. This mighty factor was passion. Battle and sport are the foundations of horse breeding. These two have as if by magic produced a passionate love for this breeding. This love works with more power, wisdom, ingenuity and industry than all book wisdom of the wisest heads and all conscientiousness of the most industrious of men. To horse breeding, as well as to all that lives, the words of the Apostle St. Paul apply: "The greatest of these is Love."

That this passion, otherwise so useful, may also lead to erroneous paths, is without doubt true in horse breeding. If this happens, and, unfortunately, it happens often, then wise counsel must step in; but this counsel must not kill the principal lever for the breeding of Thoroughbreds, namely, the just-mentioned passionate love.

The facility with which the horse acclimatises itself everywhere has produced the spread of breeding of Thoroughbreds all over the world. All half-bred horses of the old and new world, even the Trotters, have, by mingling with the Thoroughbred, produced the required steel in their breeds, which otherwise could not have been produced as well and as quickly. Even the breeds of the Steppes of Russia, America and

[1] In Germany all improved light breeds of horses, save the Thoroughbred, are called "edles Halbblut," which means "high quality Half-breds." All of these light breeds as well as the Thoroughbred itself are also called warm or hot-blooded horses, as contrasted with the cold-blooded heavy or draft breeds of horses, which are summarized in Germany under the general term "Kaltblut."

Australia, have, with the aid of Thoroughbred stallions (often, unfortunately, of very low quality), influenced the capabilities (Leistungsfähigkeit) of their horses. When the celebrated Cossack officer, Hetman Platoff (the celebrated stallion, Hetman Platoff, born 1836, was called after him), about a hundred years ago, during the fight for liberty against Napoleon in the West of Europe, learned to know and to esteem the Thoroughbred, and other fine breeds derived from same, he caused to be imported many Thoroughbred stallions of good, and of the best class, into the Cossack breeding stables near the Don, and the neighbouring Steppe breeding places. The consequence was that Russian cavalry soon after, in fact, up to the middle of the last century, were mounted on the best horses an army ever possessed. That was a time in which there were often matches between Cossack horses and Thoroughbreds. The most celebrated of these races took place on the 4th of August, 1825, near St. Petersburg, distance 75 versts, *i.e.*, about 80 kilometres. Two Cossack horses started against two Thoroughbreds. The Thoroughbred, Sharper, born 1819 in the stud of Lord Egremont, by Octavious and Y. Amazon, won easily in 2 hours, 48 minutes, although he carried 40 lbs. more (3 stone). The race took place on the high road, and the rider of Sharper broke a stirrup in the middle of the race. In England, Sharper had won as a three-year-old, a small selling race, as a four-year-old, two small Handicaps and a walk-over, and as a five-year-old, three races, inclusive of two King's Plates.

The good results which have been obtained, especially in the South of France, by the mixed Anglo-Arabic breeding, seem to lead to the conclusion that one could perhaps also improve the Oriental horse, including the Arabs, in their own homes, by the introduction of Thoroughbred stallions. If the small mistakes made in breeding Thoroughbreds were avoided, it is more than probable that in future original Oriental breeds could be improved by Thoroughbred stallions than *vice versa*. Lately, in England, they have tried to improve Thoroughbreds by the infusion of Arabic blood, but in vain. It is very remarkable, after the importation of Godolphin Arabian in 1730, that no Oriental stallion could produce any great influence on the breeding of Thoroughbreds, although in many races Oriental blood was favoured by lighter weights, whilst, on the other hand, for example, the offspring of Eclipse and Highflyer had in many races to carry about 3 to 5 lbs. more, according to proposition. In the Goodwood Gold Cup Anglo-Arabic horses were favoured from 1835 to 1896 with 14 lbs. less weight, later with 18 lbs. less. Thoroughbred Orientals, inclusive of Turks, Berbs, etc., had in this race at first 28 lbs. less to carry, later 36 lbs., without having any success. These facts and figures (36 lbs. less) are not suitable enough to recommend larger importations of Oriental blood for the breeding of light horses.

The most important spheres of action of the Thoroughbred have been mentioned pretty exhaustively above, namely, Half-breds, Trotters, Steppe

horses, and Oriental breeds. There still remains to be mentioned the coarser crosses of Thoroughbreds on some Coach Breeds and Heavy Breeds. In these cases also the Thoroughbred has been successful, and the successes would probably have been more frequent if the said breed had not become spoiled and too heterogeneous through pampering without trials.

That the heavy horse breeds have not amongst themselves produced a "Thoroughbred" drafter (*sit venia verbo*) as a representative of what they are capable of, is the regrettable consequence of the breeding which was built up for show without testing capability. There has not been sought for prominent performances, but rather for zoological attributes. As long as the breeding of drafters is carried on in this one-sided way, one cannot expect any progress in the capability for employment (for use and breeding). The so-called early maturity of the cold-blooded stock, together with early decay, rests on its effeminating method of rearing. It is not quite the same as what is called in the breeding of other animals early maturity. Neither as regards its earlier capability nor as regards its earlier breeding capacity, is the drafter earlier mature than the Thoroughbred. The expression, "early maturity," ought, in my opinion, to be eliminated in the breeding of horses, for within every breed the so-called early maturity can be obtained in a short time by a corresponding practice, without at the same time causing the shortening of life which accompanies early maturity.

One often speaks of the better use of food with heavy horses, but I think this is based on a wrong idea. Apart from the motion of exorbitant loads, as it is required, for example, in different industries and in the beet-root districts, the Half-bred, and also the Thoroughbred, perform the daily slow work of the drafter in agriculture, with considerably less food—a fact which I have noted at Beberbeck with teams composed of drafters and Half-breds. With quicker work, however, in trotting, the draft horse falls still more behind. He requires still more food, and finally gets off his feed. To make good use of food when doing nothing, or working at a comparatively slow rate, does not mean much. That the drafter of to-day, in spite of his irrational breeding, can, on account of its heavy weight, carry a larger load than a Thoroughbred, is unquestionable.

There is also no doubt that the Thoroughbred will bear a load corresponding to its weight, viz., 20 cwts. (which, considering the usual weights of practice, is a large load, a good Belgian horse carrying about 80 cwts.) quicker, at longer distances, and over worse roads. In a Thoroughbred, through many generations, more muscle power, energy, etc., has been amassed than in the present day drafter. Of course, it is to be expected that a reasonable breeding of cold-blooded stock, based on performance, will also here beat the Thoroughbred. The great popularity and spread of the heavy breeds is based principally on their easy temperament, which has been bred into them by pampering them. That a drafter bred on performance will be just as easy in temperament as the actual draft horse is highly improbable, because

it is very difficult to combine two qualities which are so different and so contradictory as is the case with powerful energy and comfort. This ease, demanded only by easy workmen, will always influence the good quality of the material. The great mistake made in comparing different breeds of horses is always the consequence of unjust parallels, as, for example, want and use of food, quiet and restless temperament of light horses at quick work, and of heavy horses at slow work. The same unjust comparison is often made with the so-called Thoroughbred knacker and a picked prominent Half-bred. Within the light breeds the same difference in the temperament of horses is observable. The most pleasant and most reasonable temperament as a riding horse is in most cases the Thoroughbred when it has left the track, and the most difficult, violent and nervous temperament is found in Half-breds when they are taken seriously into training. The less highly bred the horse is, the more the above symptoms show themselves. If the work which is required from a horse in training often reaches the limits of its capacity, or even exceeds it, it is natural that a certain fear to do the work shows itself. Thereby nervousness ensues, which in Thoroughbreds shows itself most with the worst of them. I have seen Kinseem, Ormonde, Flying Fox, Ard Patrick and others, as quiet and reasonable before a race as after one.

Of all Half-bred horses which so far have been trained for races in Trakehnen, I have only observed three which remained absolutely quiet and reasonable up to the last quick gallop, namely, Morgenstrahl, born 1896, by Blue Blood and Moba, winner of the Fanfarro Race, 1900, in Insterburg; and the two Cadiz fillies, Jagdkönigin and Kastanie, both winners of the Breeders' Races in Königsberg. These three horses were so superior to their comrades that the limits were reached neither in racing nor in training.

In consequence of its hard training, the Thoroughbred acclimatises itself very easily in different districts, whilst the softly raised draft horse is most sensitive in this regard. Pure-bred Percherons, which I saw in the year 1887 in the magnificent Steppes of the Russian Royal stud at Derkul, Government Charkow, soon lost their type, and had already in the second generation an Arabic appearance, thereby reminding one of their ancestors. In the form of croup one could still distinguish the Percheron; in its noble bearing, in the vivacity of its temperament, one seemed to recognise the Arabian cross-bred. The pure-bred Suffolks and Clydesdales reared there were soon stunted in their growth, and could not stand the rocky meadows and strong sun. The long marches, which are necessitated by the life on the Steppes, from the meadows to the distant watering-places, did not offer them the comfort which they were accustomed to, and which is necessary to their growth. Drafters bred on performance would very likely, if required, stand the life of the Steppes, just as the Thoroughbred can be raised in a low, watery district. Of course, neither the draft horse on the Steppes nor the Thoroughbred on the marsh would prosper.

A real breed of heavy horses founded on performance tests would not

produce the powerful dimensions which are, unfortunately, to-day still demanded, and even rewarded. The judging of horses only by measurements expressed in figures, whether it be for weight or dimensions of certain parts of the body, is not sufficient, and often dangerous. For many years the measuring of cannon bones has played the leading part, which, as a matter of fact, is often very useful in helping the eye when judging of the strength of the fundament within the same breed. The comparing of cannon measurements of different breeds of horses has become a modern sport.

Often incommensurable values are compared. The fore foot of a drafter which has become thick through doing nothing or only light work, is most probably (without science showing it definitely) of a softer texture, therefore less capable of resistance than that of the Thoroughbred or Half-bred, grown hard through hard work. The examinations of different cannons by Professor Krämer, in Bern, seem to confirm the above supposition. I here observe that comparative examinations on this subject lose in value if the bones are not bones of well-known horses. One must know genealogy, age, as well as the feeding and training of horses, if the bones are to be used for experiments in pressing and bending, as well as for showing specific gravity. One only may compare results if they are taken from horses of the same breed, same standard quality, same age, same state of health, especially as probably small differences may have a great importance in these experiments. If the quality of the cannons is of equal value, one must first answer the question how advantageously the weight of the body is supported, *i.e.*, how much weight rests on a definite square measurement of supporting surface. This question is answered by putting the square of the cannon girth in proportion to the body weight which it supports. If, however, the question is put how easily the supporting column (in this case the cannon) can break or bend, the cube of the cannon girth must be put in proportion to the weight.

Apart from the different quality of the mass of the bones in different breeds, of the larger marrow cavity of the cannon in drafters, etc., I believe that these measures often lead to mistaken conclusions. Practical use and experience will often lead to other and more correct results. In any case, the present horses of draft blood are the most unsuitable breeds to create in warm-blooded Half-breds, strong, good and firm fore legs. In the breeding of drafters, as well as in that of many Half-breds, one may observe that a soft method of rearing with little movement, and then only at a slow rate, is eminently suitable to produce strong (*i.e.*, big) fore legs.

Against all these errors and dangers there is only one remedy, namely, performance tests. The isolated attempts to introduce at exhibitions and shows performance tests of heavy horses will become general, if only the general public rightly honours same and requires them. *Vulgus vult decipi, ergo decipiatur*—till it is undeceived.

In the year 1867, at the last Napoleonic Exhibition in Paris, several

prizes were given for horses which could carry the largest load in proportion to their own weight. A very excellent idea. The prize (I believe the first) was not won, however, by a draft horse, but by the colt Wapsikas, bred in Torgel (Estland), 60 degrees latitude, later for a long time the Royal stud stallion in Torgel. Purely Estlandic, *i.e.*, of light breed—a small, well-proportioned horse, similar to a small East Prussian. This unexpected result, however, has, so it appears, prevented a repetition of this proposition.

The knowledge that sham is easier and cheaper to produce than the real thing, and the fact that there are still people enough who are deceived by sham, has just as much a deteriorating influence in the producing of wine and tobacco and other things as in the breeding of horses. The claims of the consumers on the capabilities, and the interest of the producer to produce as cheaply as possible, will always be difficult to meet. The craftiness of the breeder to produce showy stock very cheaply has often made greater progress than the expert knowledge of the consumer. Experts of cattle breeding complain about the same thing. Finally, one would think that the real thing, Truth, would prevail in the end. The breeding of Thoroughbreds and Trotters bred for performance is genuine, as well as, for example, the unfortunately dying out breeding of the Russian Steppes; the breeding of horses for the Russian soldiers, formerly in the Ukraine, now at the Manitsch river, was very much based on it. Since the cultivation of land, and with it the breeding of cattle and the use of the plough, have driven away the breeding of the Steppes from the magnificent Ukraine to the Manitsch river, and from thence still further and further into the unsuitable salt-containing Eastern Steppes; even Russia, so rich in horses, is forced to establish a modern system of horse-breeding in order to produce horses for its soldiers. The hope to get thereby just as nice-looking cavalry horses as the other great nations is a sop to vanity, and suppresses the knowledge that horses lose thereby in capability. The difficulty of the organisation of a successful breeding of horses, like we have in East Prussia, is perhaps thereby under-estimated, and the quality of the breed of horses produced with a beautiful sham appearance is over-estimated.

That one has to fight against this production of the beautiful sham, even in the breeding of Thoroughbreds, one can see in many English studs which breed for the yearlings' market. In this respect, in the course of the last fifty years, things have gone very much to the bad in England, as now more than half—according to some authors even nine-tenths—of all Thoroughbred yearlings are brought up for the yearlings' market. Although this showy stock very seldom becomes also breeding stock, on account of the race tests—in any case, not breeding stock which has an important influence on the breeding of Thoroughbreds—it is a pity that through human sin much good material is wasted which was destined by Divine Nature to be chosen material.

Apart from the performances obtained by no other breed than the Thoroughbred, over any distance and under any weight, the Thoroughbred

is also superior to all other breeds in various breeding performances. This is an eloquent proof that the tests to which the Thoroughbred is subject have also had a good influence on its fertility and longevity (as will be shown hereafter by many examples). The number of dams which, according to the statement of the General Stud Book, have produced sixteen living foals, is such a large one that for want of space they have been left out of the following lists. We only mention brood mares which have produced seventeen and more living foals. As the first volume of the General Stud Book only appeared in 1793, the foals born in the eighteenth century are only given in so far as they were known through the Racing Calendar, the chief basis of the Stud Book. It is clear, therefore, that in the first book many living foals are not mentioned, as they have not appeared on the racecourse. Therefore, the number of brood mares which in the eighteenth century produced seventeen and more living foals is less in the following list:—

Register of Thoroughbred Mares in the General Stud Book which have had not less than seventeen living foals.

No.	Names of the Mares.	Year of Birth.	Sires of the Mares.	Number of Foals.	Remarks
1	Sister to Sampson	1723	Greyhound	20	Dam of the Fam. 12 a
2	Pratt's Old Mare	1750	Squirt	17	Dam of the Fam. 24
3	Mare	1777	Matchem	18	Fam. 15
4	Mare	1780	Y. Marske	18	Dam of the Fam. 34
5	Nimble	1784	Florizel	17	Dam of the Fam. 32
6	Heiress	1786	Paymaster	17	Fam. 12
7	Mare	1788	Adamant	17	Fam. 3
8	Amelia (Granddaughter of No. 2)	1788	Highflyer	17	Fam. 24
9	Beatrice	1791	Sir Peter	17	Fam. 7
10	Mare	1791	Y. Marske	18	Fam. 9
11	Platina O.	1792	Mercury	19	Fam. 5 b
12	Bay Javelin	1793	Javelin	17	4 year-old first foal Fam. 3 a
13	Mare	1795	Skyscraper	17	Fam. 2 e
14	Miss Gunpowder	1797	Gunpowder	20	3 year-old first foal Fam. 34
15	Rosamond	1798	Buzzard	17	Fam. 5 a
16	Carthage (Firstling) sister to Hannibal D.	1798	Driver	18	Fam. 3
17	Grey Duchess	1799	Pot8os	19	4 year-old first foal Fam. 6

No.	Names of the Mares.	Year of Birth.	Sires of the Mares.	Number of Foals.	Remarks
18	Miss Haworth	1802	Spadille	17	3 year-old first foal Fam. 29
19	Mare	1802	Precipitate	18	4 year-old first foal Fam. 5
20	Bronze O. sister to Castrel	1803	Buzzard	17	Fam. 2 d
21	Mare	1803	Star	17	Fam. 23
22	Mare	1804	Hambletonian	18 or 19	Fam. 18
23	Maniac (Firstling) in 19 years	1806	Shuttle	19	Fam. 4 b
24	Mare	1807	Shuttle	18	Not in the Gooschen Table Frentzel Fam. 46
25	Barrosa (Grand-daughter of No. 5)	1808	Vermin out of Nike O.	17	Fam. 32
26	Lady of the Lake	1809	Sorcerer	17	Fam. 43
27	Mare	1810	Sancho	19	3 year-old first foal Fam. 18
28	Wire	1811	Waxy	17	Fam. 1
29	Miss Cantley	1812	Stamford out of Sister to Silver	17	Fam. 5 b
30	Mare (Firstling) (Daughter of No. 24)	1812	Dick Andrews	17	3 year-old first foal Not in Goosschen Table Frentzel Fam. 46
31	Clinkerina	1812	Clinker	18	Fam. 8
32	Mare	1812	Shuttle	20	4 year-old first foal Fam. 15
33	Sister to Corduroy	1812	Shuttle	20	4 year-old first foal Fam. 5
34	Nancy	1813	Dick Andrews	17	Fam. 9
35	Coquette	1814	Dick Andrews	18	4 year-old first foal Fam. 12
36	Filagree	1815	Soothsayer	18	4 year-old first foal Fam. 1 b
37	Mare	1815	Election	17	Fam. 2 a
38	Mare	1815	Orville	18	4 year-old first foal Fam. 12
39	Velocipede's dam	1817	Juniper	18	4 year-old first foal Fam. 3 c
40	Marion	1819	Tramp	17	Fam. 5 a
41	Snowball	1819	Prime Minister	18	4 year-old first foal Fam. 2 a

No.	Names of the Mares.	Year of Birth.	Sires of the Mares.	Number of Foals.	Remarks
42	Armida	1819	Rinaldo	17	Fam. 15
43	Bequest	1819	Election	17	Fam. 3 a
44	Emma	1819	Orville	18	Fam. 3 a
45	Mare	1819	Rubens	17	Fam. 27
46	Adeline	1821	Soothsayer	17	4 year-old first foal Fam. 11
47	Katherine	1821	Soothsayer	18	Fam. 22
48	Monimia	1821	Muley	17	Fam. 12 a
49	Mary	1823	Friday	19	Fam. 5 a
50	Mare	1823	Merlin	17	Fam. 10
51	Miss Thomasina	1823	Welbeck	17	Fam. 15
52	Mare	1824	Cervantes	17	Fam. 1
53	Emma	1824	Whisker	17	Fam. 7
54	Mare	1825	Phantom	17	Fam. 1
55	Banter	1826	Master Henry	17	Fam. 14
56	Margellina sister to Memnon L.	1826	Whisker out of Manuella O.	19	Fam. 11
57	Europa	1829	Reveller	17	4 year-old first foal Fam. 2 e
58	Medea	1831	Whisker	18	Fam. 8 a
59	Mare	1832	Whisker	19	Fam. 1
60	La Belle	1833	Voltaire	17	4 year-old first foal Fam. 17
61	Manilla	1833	Mulatto	17	4 year-old first foal Fam. 26
62	Valentine	1833	Voltaire	17	Fam. 12 a
63	Annette	1835	Priam	19	4 year-old first foal Fam. 16
64	Parade	1835	Pantaloon	18	3 year-old first foal Fam. 2 e
65	Executrix	1836	Liverpool	18	4 year-old first foal Fam. 4
66	Mare	1836	Muley	18	3 year-old first foal Fam. 8
67	Lapwing	1837	Bustard	17	3 year-old first foal Fam. 19
68	Martha Lynn	1837	Mulatto	18	Fam. 2 c
69	Mare	1837	Pantaloon	18	Fam. 14
70	Palmyra	1838	Sultan	17	Fam. 12 a
71	Arethusa	1839	Elis	18	Fam. 20
72	Bohemienne	1839	Confederate	18	4 year-old first foal Fam. 8
73	Equation	1839	Emilius	18	Fam. 7

No.	Names of the Mares.	Year of Birth.	Sires of the Mares.	Number of Foals.	Remarks
74	Florence	1839	Velocipede	20	Fam. 2 a
75	Mare	1839	Sir Hercules	19	4 year-old first foal Fam. 2
76	Treacherous	1839	Pantaloon	17	Fam. 2
77	Mare	1839	Plenipotentiary	17	4 year-old first foal Fam. 10
78	Barbarina	1840	Plenipotentiary	18	Fam. 23
79	Titania	1840	Emilius	17	Fam. 3 c
80	Boarding-School-Miss	1841	Plenipotentiary	17	Fam. 3 b
81	Emerald	1841	Defence	17	Fam. 3 a
82	Physalis	1841	Bay Middleton	17	Fam. 8 a
83	Mare	1841	Plenipotentiary	18	4 year-old first foal Fam. 1 a
84	Black Bess (Grand-daughter of No. 45)	1842	Sheet Anchor	17	3 year-old first foal Fam. 27
85	Stamp	1842	Emilius	17	Fam. 1
86	The Duchess of Lorraine	1842	Pantaloon	18	4 year-old first foal Fam. 2
87	Little Finch	1842	Hornsea	17	4 year-old first foal Fam. 29
88	Eulogy (Daughter of No. 68)	1843	Euclid	19	Fam. 2 c
89	Jocose (Daughter of No. 55)	1843	Pantaloon	17	Fam. 14
90	Queen Mary (Firstling)	1843	Gladiator	19	4 year-old first foal Fam. 10
91	Tour de Force	1843	Sir Hercules	17	Fam. 22
92	Defenceless	1844	Defence	19	4 year-old first foal Fam. 6 a
93	Irregularity	1844	Birdcatcher	18	3 year-old first foal Not in Goosschen Table Frentzel Fam. 72
94	Sister to Leaconfield	1844	Hampton	17	Fam. 2 a
95	Makeless	1844	St. Martin	17	4 year-old first foal Fam. 2 d
96	The Prairie Bird	1844	Touchstone	20	4 year-old first foal Fam. 1 a
97	Sultana	1844	Hetman Platoff	17	Fam. 6 a
98	Themis	1844	Touchstone	17	4 year-old first foal Fam. 9
99	Contraction	1845	Emilius	17	4 year-old first foal Fam. 43
100	Nourmahal	1845	Lanercost	17	4 year-old first foal Fam. 2 e

No.	Names of the Mares.	Year of Birth.	Sires of the Mares.	Number of Foals.	Remarks
101	Troica	1845	Lanercost	17	Fam. 3 a
102	Midia	1846	Scutari	17	Fam. 3 a
103	Sacrifice	1847	Voltaire	17	Fam. 4 d
104	Sunflower	1847	Bay Middleton	18	4 year-old first foal Fam. 1 c
105	Agnes	1848	Pantaloon	17	Fam. 28
106	Plush	1848	Plenipotentiary	19	Fam. 1 a
107	Bay Rosalind	1849	Orlando	20	Fam. 11
108	Butterfly	1849	Knight of the Whistle	18	Fam. 20
109	Gossamer	1849	Birdcatcher	17	Fam. 19
110	Miss Conyngham	1849	Slane	18	4 year-old first foal Fam. 1
111	Amazon (in 18 years)	1850	Touchstone	18	4 year-old first foal Fam. 4
112	Latona	1850	Lanercost	17	4 year-old first foal Fam. 3
113	Georgiana	1851	Touchstone	17	Fam. 7
114	Black Cotton	1852	Faugh-a-Ballagh	17	4 year-old first foal Fam. 6
115	Jeu d'Esprit	1852	Flatcatcher	17	Fam. 7
116	Mare	1852	Jon	19	4 year-old first foal Fam. 8 a
117	Defamation	1853	Jago	17	4 year-old first foal Fam. 14
118	Stuff and Nonsense	1853	The Libel	18	4 year-old first foal Fam. 1
119	All's Well	1854	The Cure	17	Fam. 5
120	Christabelle	1854	Fernhill	17	Fam. 3 c
121	Countess	1854	Slane	18	3 year-old first foal Fam. 8
122	Countess of Westmorland	1854	Melbourne	19	4 year-old first foal Fam. 3
123	Daisy	1854	Touchstone	18	Fam. 12
124	Media Noce	1854	Weatherbit	18	Fam. 5 b
125	Electra	1855	Touchstone	17	4 year-old first foal Fam. 2 e
126	Mare	1855	Melbourne	18	Fam. 5 a
127	Emotion	1856	Alarm	17	Fam. 1 a
128	Amethyst	1857	Touchstone	18	Fam. 11
129	Codicil	1857	The Cossack	19	Fam. 6 a
130	Emma	1857	Storm	18	3 year-old first foal Fam. 19
131	Lambda	1857	Umbriel	17	Fam. 19
132	Spring Blossom	1857	Touchstone	17	4 year-old first foal Fam. 14

No.	Names of the Mares.	Year of Birth.	Sires of the Mares.	Number of Foals.	Remarks
133	Charmione	1858	Orlando	17	Fam. 2 c
134	Lady Blanche	1858	Voltigeur	17	Fam. 2 d
135	Miss Fanny	1858	Vanderdecken	19	Fam. 8
136	Tartlet	1858	Birdcatcher	19	Fam. 21
137	Vergiss Mein nicht	1858	Flying Dutchman	17	Fam. 9
138	Dewdrop	1859	Mildew	19	4 year-old first foal Fam. 8 a
139	Entremet	1859	Sweetmeat	17	Fam. 2 e
140	Mare	1159	Lambton	18	4 year-old first foal Not in Goosschen Table Frentzel Fam. 83
141	Leda	1859	Weatherbit	17	Fam. 2 a
142	Pompadour	1859	Stockwell	18	4 year-old first foal Fam. 2 e
143	Mare	1859	Y. Melbourne	17	Fam. 9
144	Amaranth	1860	Newminster	17	3 year-old first foal Fam. 20
145	Bonny Bell	1860	Voltigeur	17	Fam. 10
146	Crucifixion	1860	Pelion	17	Fam. 27
147	Last Love	1860	Annandale	18	4 year-old first foal Fam. 4
148	Novara	1860	Weatherbit	19	Fam. 2
149	Old Orange Girl	1860	Kingston	17	Fam. 7
150	Pimpernel	1860	Sweetmeat	17	Fam. 2 c
151	The Doe	1861	Turnus	18	Fam. 8
152	Mystery	1861	Augur	17	Fam. 2 e
153	Tomfoolery	1861	King Tom	17	Fam. 2
154	Mare	1861	Wild Dayrell	17	4 year-old first foal Fam. 3 b
155	Agile	1862	Gibraltar	17	4 year-old first foal Fam. 3
156	Lady Charlotte	1862	Fandango	17	4 year-old first foal Fam. 8
157	Money Spinner	1862	Marsyas	17	4 year-old first foal Fam. 16
158	Danish Rose	1863	Surplice	17	4 year-old first foal Fam. 12
159	Delilah	1864	Thormanby	18	4 year-old first foal Fam. 1 c
160	Laura	1861	Lambton	18	Fam. 17
161	Lina	1864	Stockwell	18	4 year-old first foal Fam. 7
162	Murcia	1864	Lord of the Isles	18	4 year-old first foal Fam. 6

No.	Names of the Mares.	Year of Birth.	Sires of the Mares.	Number of Foals.	Remarks
163	Ninna	1864	Buccaneer	18	3 year-old first foal Fam. 11
164	Queen Esther	1864	Warlock	22	4 year-old first foal Fam. 4 c
165	Perea	1865	Voltigeur	17	Fam. 3
166	Siluria	1865	Caractacus	17	Fam. 1 a
167	The Sphynx	1865	Newminster	18	Fam. 2 a
168	Thrift	1865	Stockwell	17	4 year-old first foal Fam. 10
169	Jenny Diver	1866	Buccaneer	20	4 year-old first foal Fam. 20
170	Night jar	1866	Wild Dayrell	19?	Fam. 15
171	Cestus	1867	Newminster	17	Fam. 3 b
172	Performer	1867	Adventurer	17	4 year-old first foal Fam. 1 c
173	Canonical	1868	Cathedral	20	4 year-old first foal Fam. 11
174	Furiosa	1868	Orlando	17	Fam. 45
175	Lady Mortimer	1868	Kettledrum	18	4 year-old first foal Fam. 10
176	Claretto	1869	Claret	19	4 year-old first foal Fam. 25
177	Eva	1869	Breadalbane	17	4 year-old first foal Fam. 2 c
178	Wee Lassie	1869	Scottish Chief	18	Fam. 2 a
179	True Blue	1870	Oxford	20	Fam. 32
180	Cherry Duchess	1871	The Duke	18	Fam. 27
181	Mirror	1871	Speculum	17	Fam. 49
182	Pillage	1871	Cambuscan	19	4 year-old first foal Fam. 8
183	Pomona	1871	Skirmisher	18	Fam. 19
184	Turn of the Tide	1871	Mandrake	17	Fam. 18
185	Enigma (Daughter of No. 167)	1872	The Rake	17	Fam. 2 a
186	Katrine	1872	Blair Athol	17	4 year-old first foal Fam. 5 b
187	Katrine	1873	Blinkhoolie	17	4 year-old first foal Fam. 9
188	Orchestra	1873	Trumpeter	17	4 year-old first foal Fam. 12
189	St. Editha	1873	Kingley Vale	18	4 year-old first foal Fam. 16
190	Stone Chat	1873	Adventurer	17	4 year-old first foal Fam. 16

No.	Names of the Mares.	Year of Birth.	Sires of the Mares.	Number of Foals.	Remarks
191	Miss Mannering	1874	Blair Athol	19	4 year-old first foal Fam. 43
192	Palmflower	1874	The Palmer	17	Fam. 20
193	Shatemuc	1874	Oxford or The Duke	18	4 year-old first foal Fam. 2 d
194	Idun	1876	Rosicrucian	18	Fam. 4
195	Mrs. Knight	1876	Knight of the Garter	17	3 year-old first foal Fam. 4 b
196	Osmunda	1876	Sterling	17	Fam. 2 a
197	Festival	1877	Sterling	17	4 year-old first foal Fam. 1 b
198	Illuminata	1877	Rosicrucian	18	4 year-old first foal Fam. 1 c
199	Miss Mabel	1877	Knight of the Garter	17	Fam. 11
200	Pink Thorn	1877	Cathedral	18	4 year-old first foal Fam. 2 a
201	Sophy	1877	St. Albans	18	4 year-old first foal Fam. 12
202	Celandine	1878	King Tom or Macaroni	17	Fam. 1 c
203	Eugenie	1878	Pero Gomez	17	Fam. 16
204	Loving Cup	1878	Brown Bread	17	4 year-old first foal Fam. 23
205	Rent Day	1878	Macgregor	17	4 year-old first foal Fam. 3 b
206	True Love	1878	Sterling	18	Fam. 3 c
207	Bonny Rose	1879	Rosicrucian	18	Fam. 31
208	Biserta	1880	Lord Lyon	17	Fam. 22
209	Fisher Lass	1880	Exminster	18	4 year-old first foal Fam. 8
210	Hall Mark	1880	Standard	17	Fam. 2 b
211	Jennie Winkle (Daughter of No. 169)	1880	Mr. Winkle	17	4 year-old first foal Fam. 20
212	Dongola	1883	Doncaster	18	4 year-old first foal Fam. 6 a
213	Red Clove	1883	Sterling	17	4 year-old first foal Fam. 3 b

I know of no horse breed which can show, even approximately, such breeding merits as the English breed of Thoroughbreds, according to the above list. In Trakehnen only two cases have taken place, in more than 100 years, in which one horse has given birth to 19 living foals. To the following list I have to add that two Thoroughbred dams with 18 foals each are not mentioned.

List of Brood Mares in Trakehnen having produced 17 and more living foals.

No.	Names of the Dams.	Born.	Sires of the Dams.	Number of Foals.
1	Lemma	1810	Oronocco I	17
2	Duellona	1814	Rodrich	17
3	Desdemona	1815	Caril	17
4	Junia	1815	Rodrich	17
5	Bazilia	1817	Caril	18
6	Crab	1818	Oronocco I	18
7	Czarina	1818	Oronocco II	17
8	Zoraide	1818	Rodrich	18
9	Anta	1819	Pretender	19
10	Arcade	1819	Pretender	18
11	Persienne	1819	Teheran ox	19
12	Angloise	1820	Scrapall xx	17
13	Ultima	1820	Blackamoor xx	17
14	Victory	1820	Blackamoor xx	18
15	Doris	1821	Scrapall xx	17
16	Masora	1822	Eminlik ox	18
17	Olympia	1823	Blackamoor xx	17
18	Collina	1826	Trafalgar	17
19	Alzire	1828	The Cryer xx	17
20	Hipponome	1834	Acarnas	17
21	Jupine	1834	Sterling IV	17
22	Medina	1838	Big Ben xx	17
23	Vecordia	1839	Black Hambleton xx	17
24	Antha	1852	Paragone	17
25	Perina	1861	Promoter	18
26	Injurie	1863	Venerato	17
27	Lava	1863	Grezano	17
28	Herz	1866	Duplicat	17
29	Harmonica	1874	Journey	17
30	Atella	1883	Flügel	17

In order to fully appreciate the work of Thoroughbreds not attained also in Trakehnen, as regards the living born foals of one dam, I add a list of brood mares, of Half-breds having produced 17 and more living foals.

I. Beberbeck. Stud Book, Volume I. 342 brood mares.

1. Lolly 1862 by Hipparch . . . . 17 foals.
2. Custozza 1867 by Thanatos . . . . . . 17 ,,
3. Gurly 1868 by J. Harlequin . . . . . . 18 ,,

II. Ostpreussen. Stud Book, Volume IV. 4,060 brood mares.

1. Kunzine 1881 by Mercos No. 4868 . . . . 17 foals.
2. Granate 1882 by Dativ No. 2763 . . . . 17 ,,
3. Viva 1883 by Vivat No. 2073 . . . . . . 17 ,,

Besides these only 11 dams which had 16 foals.

III. Hannover. Stud Book, Volume III. 3,527 brood mares.
1. Godelinde 1872 by Goldoni No. 2399 . . 18 foals.
2. Numana 1873 by Nord No. 107 . . . . 18 ,,

The superiority of the English Thoroughbred over all Half-breds and draft breeds is perhaps shown still more clearly from its special work at a great age, or under difficult circumstances, as can be seen from the following examples. I have to add that there are numerous cases in which English Thoroughbred mares 22 to 29 years old have still brought forth living foals. In the following list only such cases are specially mentioned where the offspring of these aged mares have shown themselves to be really good horses, either on the racecourse or in the stud.

Special Breeding Performances of Old Thoroughbred Mares in England.

No.	Name and Pedigree.	Born.	Breeding Performances.
1	Brown Farwell by Matheless—Brimmer.	1710	16 foals, 7 of which were Pedigree Mares in Fam. 4. One born in the 20th year (had 16 foals); one in its 21st year (dam of Sweepstakes); one in the 22nd year (dam of Dormouse); and one in the 25th year (dam of Matchem).
2	Sister to Sampson by Greyhound — Curwen Bay Barb	1723	20 foals. In its 26th year Sally, a good racer, 4 to 6 years, and a good Brood Mare (11 foals).
3	Little Hartley Mare by Bartlett's Childers out of Flying Whigg.	1727	13 foals, of which were: Tortoise, Janus, Blank, Old England, Trimmer, Shakespeare (according to Lawrence sire of Eclipse). In its 24th year Miss Meredith, Foundation Mare in Fam. 15, and in its 25th year, a mare with good progeny.
4	Look at Me Lads by Grasshopper — Newton's Bay Arabian.	1731	As a 6 year-old, at Newmarket, King's Plates, ran, not placed. Had first foal when 20 years of age. 12 foals, amongst which were: in its 21st year, Lottery by Blank; at 24 a mare by Ancastor Sterling, Foundation Mare of Fam. 14; at 30, Whisper by Blank, a good racer; at 32, Amazon by Blank, a good racer and brood mare; at 33 its last foal.
5	Spinster by Partner out of Bay Bloody Buttocks.	1735	Won the King's Plates as a 5 and 6 year-old at Newmarket. First foal at 8 years of age; Spinster (Foundation Mare in Fam. 4), 11 foals. At 25, Golden Grove, Foundation Mare of Fam. 4 d.

No.	Name and Pedigree.	Born.	Breeding Performances.
6	Sister to Regulus by Godolphin Arabian out of Grey Robinson.	1743	16 foals, of which were: at 23, Grey Mare by Snap, Foundation Mare in Fam. 11 (Bird-catcher); and at 27, Mussulman, a famous racer.
7	Miss Wilkinson By Regulus out of Miss Layton.	1747	Won a race as a 4 year-old. First foal when 8 years old. 10 foals. At 25, Mare by Syphon, Foundation Mare in Fam. 43.
8	Duchess by Whitenose out of 19 year-old Miss Slamerkin.	1748	Ran 4—7 year-old 16 times and won 12 times. First foal at 9 years old. At 23, Pyrrha, Foundation Mare in Fam. 7, which had Beatrice when 20 years old, dam of 17 foals.
9	Spiletta by Regulus out of Mother Western.	1749	Not run. First foal at 10 years old. At 23, Garrick (own brother to Eclipse), and at 25, Briseis.
10	Cypron by Blaze out of Salome.	1750	Not run. First foal at 5 years old. 16 foals without a break, amongst which was Herod.
11	Pratt's Old Mare by Squirt—Mogul.	1750	Not run. 17 foals, amongst which were 12 good racers. At 24 Purity (by the 25 year-old Matchem), dam of Rockingham and 12 other foals. Lived to 27 years old. Fam. 24.
12	Mare by Rib out of Mother Western.	1751	Not run. Five grey foals, amongst which, at 24, was the Foundation Mare of Marsyas, Kingston, Archibald, Hermit, etc. Fam. 12.
13	Polly by Black and All Black out of Fanny.	1756	3 year-old ran once. First foal at 8 years old. 14 foals, amongst which were: King Fergus, at 20; Fanny, Foundation Mare in Fam. 6; and at 25, Cast-off (a good racer).
14	Mare (chestnut) by Tartar—Mogul.	1757	Did not run. First foal at 6 years old. 16 foals, amongst which were: 10 chesnuts by Eclipse; at 21, Mercury; at 23, Volunteer; at 28, Queen Mab, a famous Foundation Mare in Fam. 9, with 16 foals, amongst which were Remembrancer L., and at 20, Remembrance, Foundation Mare in Fam. 9.
15	Calliope by Slouch out of Lass of the Mill.	1763	4—6 year-old ran six times, won twice. First foal at 7 years old. 10 foals, of which were: at 18, Omphale L.; at 20, Sir John Falstaff, a good racer; and at 25, a Mare by Phonomenon, that gave birth to living twins, amongst which a Foundation Mare in Fam. 2

No.	Name and Pedigree.	Born.	Breeding Performances.
16	Jö by Spectator—Blank.	1767	Ran as a 3 and 4 year-old four times, won once. First foal at 11 years old. 10 foals. At 20, Patriot, a very fine racer, winning 2—8 year-old.
17	Mother Brown by Trunnion—Old England.	1771	4—12 year-old ran 39 races and won 20. As 8 year-old, and in foal, won a race over 4 miles. As a 9 year-old, after foaling, ran again four times and won four times (amongst which was one King's Plates). As a 10 year-old ran six times, winning five times (one King's Plates). As an 11 year-old ran six times, winning twice. As a 12 year-old ran once, not placed. Had 6 foals. At 21, Toby, a good racer, in Ireland; at 25, Jerry Sneak, a splendid racer in Ireland, won as a 13 year-old, and was the sire of many good racehorses; at 26, Mare by Bagot, grandmother of Nabocklish, Fam. 4. Was about 30 years old when it had last foal.
18	Cypher by Squirrel out of 23 year-old Mare by Regulus.	1772	4 year-old ran once. 12 foals. 3 Foundation Mares in Fam. 3 a. At 24, Alfred by John Bull.
19	Termagant by Tantrum out of Cantatrice.	1772	First foal at 12 years old (Edmund 2nd in L). 11 foals by 10 different stallions. At 19, Evelina, dam of Orville, Paulowitz, and Cervantes; at 27, Sparrow Hawk (3rd in L).
20	Mare by Syphon out of 25 year-old Miss Wilkinson.	1772	Did not run. First foal at 10 years old. 16 foals without a break, last foal in its 27th year. Foundation Mare of Fam. 43.
21	Calash by Herod out of Teresa.	1775	4 year-old ran six times, winning five times. First foal at 8 years old. 11 foals, amongst which as Firstling Paragon L; at 14, Whiskey; and at 24, Lady Charlotte, dam of Cwrw 2.
22	Cälia by Herod out of Proserpine (own sister to Eclipse).	1775	3 year-old ran once. 14 foals. At 23, Highland Fling by Spadille.
23	Miss Hervey by Eclipse out of Clio.	1775	3 and 4 year-old ran eight times, won twice. First foal at 8 years old. 13 foals. At 22, Haphazard by Sir Peter, and at 23, a Mare by Sir Peter—Foundation Mare of Fam. 35.
24	Fanny by Eclipse out of 20 year-old Polly.	1776	Not run. First foal at 11 years old. 14 foals, of which was Volante O., Fam. 6.

No.	Name and Pedigree.	Born.	Breeding Performances.
25	Mare by Matchem (28 year-old)—Syphon.	1777	3 year-old ran seven times, won once. 18 foals, of which were: Eager D, Fidget, Bustler; at 24, Professor (ran twice as a 3 year-old); at 25, Sinbad (later Rainbow, ran as a 3 and 4 year-old four times, won twice); and at 27, Fan (ran once as a 3 year-old, and had 8 foals). At 32 last foal.
26	Horatia by Eclipse out of 28 year-old Countess.	1778	3—5 year-old ran nine times, won three times. First foal at 8 years old. 15 foals. At 19, Archduke D, and at 25, Paris D.
27	Camilla by Trentham out of Coquette.	1778	3—6 year-old ran seventeen times, won six times. First foal at 9 years old: Y. Camilla, a famous Foundation Mare in Fam. 11. 12 foals, at 25, Jerboa, Foundation Mare of Venison, The Little Wonder D, St. Simon, Orme, etc.
28	Expectation by Herod out of 21 year-old Mare by Skim.	1779	5 year-old ran twice. First foal at 8 years old. Spinster, Foundation Mare in Beberbeck. 13 foals. At 23, Anticipation, Foundation Mare in Fam. 4 (Executrix, Vanessa, Manganese, Alice Hawthorn, etc.).
29	Faith by Pacolet out of Atalanta.	1779	Ran and won 3—7 year-old, ran as 8 year-old, not winning. First foal at 11 years old. 9 foals. At 18, Marcia; at 22, Vesta, Foundation Mares in Fam. 2 a; at 24, Camillus.
30	Luna by Herod out of Proserpine.	1779	Not run. First foal at 8 (?) years old. 14 foals. At 24, Cardinal Puff by Cardinal.
31	Maria by Telemachus out of 20 year-old A-la-Grecque.	1783	3 and 4 year-old ran eight times, won twice. First foal at 8 years old. 10 foals. At 15, Marianne, dam of Octavius D and Caroline O; at 22, Marybella, Foundation Mare in Fam. 23; and at 24, Breslaw, a famous racer.
32	Nimble by Florizel out of Rantipole.	1784	2—6 year-old ran 36 times, won 19 times. First foal at 7 years old. 17 foals, of which were once twins, Nike O, and at 23, Donna Clara, Foundation Mare for Fam. 32.
33	Pewet L. by Tandem out of Termagant (No. 19)	1786	3—6 year-old ran thirteen times, won four times. First foal at 8 years old. 9 foals. At 16, Sir Paul; at 18, Pauline L; and at 26, Clinkerina (dam of Humphrey Clinker).
34	Prunella by Highflyer out of Promise.	1788	3—6 year-old ran eleven times, won three times. First foal at 8 years old. 12 foals, of which 9 were very fine. At 23, Prudence, Foundation Mare in Fam. 1 a.

No.	Name and Pedigree.	Born.	Breeding Performances.
35	Sister to Silver by Mercury—Herod.	1790	Ran and won as a 1 year-old at Newmarket. Was used for many years as a riding and carriage horse, and had only one eye. First foal at 14 years old. 9 foals. At 22, Miss Cantley; at 23, Belvoirina, both Foundation Mares in Fam. 5 b (Marigold). In its 27th year it gave birth to a foal with one eye, and was shot when 28 years old.
36	Evelina by Highflyer out of Termagant (19 year-old).	1791	3—5 year-old ran eight times, won three times. First foal at 7 years old. 12 foals. At 22, Paulowitz by Sir Paul.
37	Platina O. by Mercury—Herod (own sister to No. 33).	1792	Ran once as a 3 and once as a 4 year-old, O. First foal at 5 years old. 19 foals. At 25, Adelicia (ran as a 2 year-old and became a good brood mare); at 27, Akarius (a very good racer 2—4 year-old, won twice as a 2 year-old, was not placed in the St. Leger), and lived to 28 years of age.
38	Mare by Pot8os out of Editha.	1794	Not run. First foal at 7 years old. 12 foals, once dead twins. At 24, the grandmother of Neville, Fam. 3 c.
39	Mare by Skyscaper out of Isabel.	1795	Not run. 17 foals. At 25, Wiseacre, a good racer.
40	Mare by Precipitate — Woodpecker.	1796	Not run. First foal at 8 years old. 16 foals. At 25, Monimia, a good racer and Foundation Mare in Fam. 12 a; at 27, The Captain, a good racer.
41	Mare by Ruler out of Treecreeper.	1797	Ran three times as a 3 year-old. First foal at 12 years old, Oiseau by Camillus. 13 foals. At 25, Miss Crachami, a good racer, and Foundation Mare in Fam. 42.
42	Y. Lalage by Chocolate out of 21 year-old Lalage, which 4—12 year-old won races.	1797	Ran four times as a 2 and 3 year-old, won once. 11 foals. At 27, De Vere by Feramorz, a famous racehorse in Ireland.
43	Marcia by Coriander out of Faith (3—7).	1797	3—9 year-old a splendid racer, ran twenty-eight times, won nineteen times. First foal at 11 years old, 7 foals, amongst which were: Marciana (Foundation Mare in Fam. 2 a, grandmother of Hetman Platoff and Don John L). At 20 had her last foal.

No.	Name and Pedigree.	Born.	Breeding Performances.
44	Rosamond by Buzzard out of Roseberry.	1798	3 and 4 year-old a good racer, ran nine times, won three times. First foal at 6 years old. 17 foals. At 22, Barefoot L, and 26, a Mare by Tramp, Foundation Mare in Fam. 5 a. Lived to 31 years of age.
45	Mandane by Pot8os out of Y. Camilla.	1800	Ran six times as a 2 and 3 year-old, won twice. First foal at 4 years old. 13 foals, amongst which were: Mannella O, Altisidora L; at 20, Lottery by Tramp; at 21, Brutandorf by Blacklock; and at 22, a Mare by Whisker, dam of Liverpool. Lived to 26 years of age.
46	Parasol by Pot8os out of Prunella (No. 34)	1800	Ran and won 3—8 year-old, at 8 years in foal, ran four times and won twice. First foal at 9 years old. 12 foals, amongst which were: Partisan, Pindarri 2; at 19, Pastille 2, O; and at 24 her last foal.
47	Mare by Delpini out of Tipple Cyder.	1802	Not run. First foal at 6 years old. 15 foals. At 20, Wildwood, and at 21, Sir Catton, both good racers; at 23, The Colonel L, and at 24. The Captain, a famous racer.
48	Thomasina by Timothy out of Violet.	1804	A very good racer 2—5 year-old. First foal at 8 years old. 16 foals without a break.
49	Remembrance by Sir Solomon out of 20 year-old Queen Mab.	1805	A very good racer 3—5 year-old. First foal at 8 years old. 13 foals. At 26, Oblivion, dam of Springy Jack and grand-dam of Daniel O'Rourke D, Foundation Mare in Fam. 9.
50	Little Folly by Highland Fling out of Harriet.	1806	Ran three times as a 3 year-old, won once. First foal at 6 years old. 13 foals. At 24, Folly, Foundation Mare in Fam. 5 (Miami, Rosicrucian, etc.).
51	Lisette by Hambletonian out of Constantia.	1806	A good racer 3 and 4 year-old. First foal at 7 years old. 14 foals. At 24, Clearwell 2.
52	Snowdrop by Highland Fling out of Daisy.	1806	A good racer 2—4 year-old. First foal at 7 years old. 11 foals. At 22, Galantine 1.
53	Miss Wasp by Waxy out of Trumpetta.	1807	Won as a 2 year-old. First foal at 7 years old. At 21, Y. Muley, and at 23, Vespa O.
54	Mare by Walton out of 19 year-old Y. Noisette.	1808	Not run. First foal at 10 year-old. 11 foals. At 23, Black Agnes, Foundation Mare in Fam. 28.

No.	Name and Pedigree.	Born.	Breeding Performances.
55	Manuella O. by Dick Andrews out of Mandane (No. 45).	1809	3—5 year-old ran thirteen times, won three times. First foal at 8 years old. 15 foals without a break, amongst which were: Memnon L, Belzoni, Margelina (had 19 foals); at 20, Nitocris, Foundation Mare in Fam. 11 (Fisherman, Strathcona, etc.); at 21 and 22, two good racers, Belshazzar and Belluno.
56	Lady of the Lake by Sorcerer out of 20 year-old Mare by Saltram.	1809	3—4 year-old a good racer. First foal at 6 years old. 17 foals. At 22, Ophelia, Foundation Mare in Fam. 43, and last foal at 27 years old.
57	Bella by Beningbrough out of Peterea.	1811	Ran twice as a 6 year-old, won once. First foal at 8 years old. 13 foals. At 24, Bellona, Foundation Mare of the Fam. 44; at 25, last foal, ran in race.
58	Wire (sister to Whalebone) by Waxy out of Penelope.	1811	3 and 4 year-old a good racer. First foal at 8 years old. 17 foals. At 22, Verulam; at 26, her last foal. Lived to 28 years of age.
59	Mare by Orville out of Miss Grimstone.	1812	Not run. 14 foals, amongst which were: Tranby by Blacklock; at 22, Miss Bowe, and at 25, a Mare by Priam or Zinganee, the two chief Foundation Mares in Fam. 21.
60	Sister to Corduroy by Shuttle out of 18 year-old Lady Sarah.	1812	Not run. First foal at 4 years old. 20 foals, the first 19 without a break, at 24, the last foal by Waverley (ran as a 2 year-old, had 11 foals, and became Foundation Mare in Fam. 5), and lived to 26 years old.
61	Octaviana by Octavian—Shuttle.	1815	2 and 3 year-old a good racer. First foal at 5 years old. 15 foals. At 22, Crucifix O. 2. 1, dam of Surplice D. L.
62	Silvertail by Y. Gohanna—Orville.	1815	3—4 year-old a good racer. First foal at 6 years old. 15 foals. At 24, Bonney Bonnet, Foundation Mare in Fam. 2 d.
63	Mare by Comus—Delpini.	1816	Not run. First foal at 14 years old. 8 foals. At 22, Miss Lydia, Foundation Mare in Fam. 9; at 24, Nutwith L.
64	Lacerta by Zodiac out of Jerboa.	1816	3—4 year-old moderate racer, then was used as a riding horse. First foal at 10 years old. 15 foals. At 21, Little Wonder D, and at 25, Little Fairy, grand-dam of St. Angela, St. Simon's dam, Foundation Mare in Fam. 11.

No.	Name and Pedigree.	Born.	Breeding Performances.
65	Mare (Velocipede's dam) by Juniper—Sorcerer.	1817	Not run. First foal at 4 years old. 18 foals, of which 7 were Foundation Mares in Fam. 3 c. At 24, Merope, grand-dam of Galopin D, Moslem 2, and Knight of the Crescent.
66	Electress by Election—Stamford.	1819	2—4 year-old a good racer, once slipped twins. First foal at 9 years old. 11 foals. At 16, Vauban; at 19, Miss Twickenham (dam of Teddington); at 20, Mare by Sir Hercules (Foundation Mare in Fam. 2 and had 20 foals); at 22, Splitvote (grand-dam of St. Albans L, Savernake and Gang Forward 2); last foal at 24 years old.
67	Mare by Rubens out of Tippitywichet.	1819	2 and 3 year-old ran twice, was second in O. First foal at 6 years old. 17 foals, amongst which were: Phosphorous D, May Day 1; at 20, Firebrand 1; and at 23, Ratafia, Foundation Mare in Fam. 27.
68	Guiccioli by Bob Booty out of Flight.	1823	2—6 year-old a very good racer. Ran as a 6 year-old, after foaling and again in foal (produced a healthy foal), six times, won twice, in the King's Plates, over 4 miles with heats, in September, in Curragh (6 starters), and in Northumberland Handicap in October, at Curragh (11 starters, amongst which were such good horses as Skylark, a 3 year-old, and Napoleon, a 5 year-old). First foal at 6 years old. 13 foals, amongst which were: Birdcatcher and Faugh-a-Ballagh; at 21, living twins, one of which was Gramachree, Foundation Mare in Fam. 11; and at 24, St. John (later Carlow), a good racer 2—7 year-old.
69	Mare by Cervantes—Camillus.	1824	Not run. First foal at 8 years old. 17 foals without a break. Foundation Mare in Fam. 1.
70	Clari by Smolensko—Precipitate.	1824	Not run. First foal at 5 years old: Clara, 2—5 year-old a good racer, and Foundation Mare in Fam. 6 a. The next 7 foals were used in Ireland as riding horses. 13—18 she was a riding horse, and afterwards, 19—27, she had 7 more foals, the greater part of which were good racers. Altogether she had 15 foals, and lived to 29 years of age.
71	Greenmantle O. by Sultan out of Dulcinea.	1826	2—4 year-old a very good racer. First foal at 8 years old. 13 foals. At 24, Kernel, Foundation Mare in Fam. 6 a.

No.	Name and Pedigree.	Born.	Breeding Performances.
72	Catherina by Whisker out of Alecto.	1830	A splendid racer, ran 2—11 year-old 176 times and won 81 times, 12 times as an 11 year-old. First foal at 16 years old. 9 foals, of which 6 were good racers (Sweetheart, winner in July Stakes, and Phaeton, winner in the Criterion Stakes). At 22, Y. Catherina (Nagara), Foundation Mare in Fam. 6 a; at 27, last foal, which ran a race as a 3 year-old.
73	Black Agnes by Velocipede out of 23 year-old Mare by Walton.	1831	Ran once as a 3 year-old. First foal at 17 years old. 7 foals, amongst which was, as a firstling, Agnes by Pantaloon, Foundation Mare in Fam. 28, and dam of the four off-springs of King Tom: Queen-of-the-Vale, King-of-the-Vale, Dalesman, and Evelina.
74	Burletta by Actäon out of Comedy.	1832	2—8 year-old a very good racer. First foal as a 10 year-old. 14 foals without a break, amongst which were two good Foundation Mares in Fam. 23 (of which one was a firstling).
75	Bee's Wing by Dr. Syntax—Ardrossan.	1833	2—9 year-old a splendid racer, ran 64 times, won 51 times. First foal at 11 years old. 8 foals, amongst which were: Nunnykirk 2, Newminster L, and three splendid Foundation Mares in Fam. 8.
76	Miss Bowe by Catton out of a 22 year-old Mare by Orville.	1834	Ran nine times as a 3 and 4 year-old, won 6½ times. 16 foals, amongst which were: Iris O, Longbow, De Clare, Bowstring, and at 23, Tom Bowline.
77	Garland by Langar out of Cast-steel.	1835	3—6 year-old ran 24 times, won 6 times. 12 foals. At 24, Vertumna, Foundation Mare in Fam. 19, grand-dam of Moorhen, Gallinule's dam.
78	Red Pape by Rowton out of Pigmy.	1835	Not run. Covered at 3 years old. 16 foals without a break. Nothing known after.
79	Pocahontas by Glencoe out of Marpessa.	1837	2—5 year-old ran nine times without winning, Criter., O., Gep., Cs., Cm., not placed. First foal at 6 years old. 15 foals, amongst which were: Stockwell L, 2, Rataplan Dcp., King Tom, The Knight of Kars, Ayacanora; at 21, Knight-of-St.-Patrick; at 24, Auricula (dam of Nuneham and Blanford); at 25, Araucaria (dam of Wellingtonia, Camelia 1 O., Chamont 2, and Rayon d'Or L, Cd.). Lived to 33 years of age.

No.	Name and Pedigree.	Born.	Breeding Performances.
80	Lapwing by Bustard—Muley.	1837	Not run. Covered at 2 years old, had first 10 foals without a break. Altogether 17 foals, the last in her 29th year: Sir Niel.
81	Alice Hawthorn by Muley Moloch out of Rebecca.	1838	3—7 year-old a splendid racer, ran 71 times and won 50½ times, which included 17 King's Plates, Gcp and Dcp twice. First foal at 11 years old, and had 7 foals without a break. Afterwards she slipped and had 3 more foals, that is, 10 foals altogether, 3 splendid Foundation Mares in Fam. 4 c, of which were Terrona (grand-dam of Queen Esther, which had 22 foals); afterwards, after she had slipped, at 19, Thormanby D, and also Lord Fauconberg, Oulston and Findon.
82	Mare by Beiram out of Addy.	1838	Not run. First foal at 13 years old. 12 foals, amongst which was Christabelle, grand-dam of Aspirant. Lived to 27 years of age.
83	Florence by Velocipede out of Margarette.	1839	2—3 year-old ran ten times, won three times. First foal at 5 years old. 20 foals without a break.
84	Revival by Pantaloon out of Linda.	1839	Not run. Covered at 2 years old. 8 foals without a break. Altogether 16 foals, in spite of having made a journey to France and back.
85	Boarding-School-Miss by Plenipotentiary out of Marpessa.	1841	A good racer 3 to 5 year-old, ran 22 times, won 6 times. First foal at 7 years old. 17 foals without a break, amongst which were 6 Foundation Mares in Fam. 3 b, then killed.
86	Physalis by Bay Middleton out of Baleine.	1841	2—5 year-old ran 22 times, won 6 times. First foal at 7 years old. 17 foals. At 23, Legacy, Foundation Mare in Fam. 8 a.
87	Mare by Little Red Rover out of Eclat.	1841	Not run. First foal at 8 years old. 15 foals, amongst which were: Buccaneer; at 22, Lady Audley (Touchet's dam), and at 24, Stars-and-Stripes, Foundation Mare in Fam. 14.
88	Jocose by Pantaloon out of Banter.	1843	Ran four times as a 4 year-old, won twice. First foal at 6 years old. 17 foals, amongst which were: Macaroni 2 D, Dcp., and at 24, Flippant, Foundation Mare in Fam. 14.
89	Queen Mary (Firstling) by Gladiator out of a 3 year-old Mare by Plenipotentiary.	1843	Not run. First foal at 4 years old. 19 foals (and one dead foal), amongst which were: Blink Bonny D.O., at 21, Blinkhoolie, and at 27, Bonnie Doon, Foundation Mare in Fam. 10. Lived to 29 years of age.

No.	Name and Pedigree.	Born.	Breeding Performances.
90	Ferina by Venison out of Partiality.	1844	Not run. First foal at 5 years old. 16 foals. At 22, Pretender 2 D.
91	Maid of Masham by Don John out of Miss Lydia.	1845	3—6 year-old a very good racer. First foal at 8 years old. 14 foals. At 21, Faraway; at 22, Lady Masham, both Foundation Mares in Fam. 9, the latter also dam of the two own brothers, Peter Hrd. and Timothy Acp.
92	Haricot (Firstling) by Mango or Lanercost out of the 4 year-old Queen Mary.	1847	3—7 year-old a very good racer. First foal at 8 years old. 13 foals, amongst which were: Caller Ou L; at 21, Lady Langden (dam of Sir Bevys D and Hampton Gcp. Dcp.); at 24, Mare by Kettledrum, Foundation Mare in Fam. 10; at 25, Lentil (ran four times as a 2 year-old).
93	Mare By Birdcatcher—Hetman Platoff.	1850	Not run. 10 foals, amongst which was Solon. At 22, Xenophon.
94	Catharina Hayes O. by Lanercost out of Constance.	1850	2—4 year-old a splendid racer. First foal at 6 years old. 13 foals. At 22, Marquise de Caux, Foundation Mare in Fam. 22; last foal at 25. Lived to 27 years of age.
95	Gertrude by Hautboy out of Middle.	1850	Not run. First foal at 9 years old. 12 foals, amongst which were two Foundation Mares in Fam. 3. At 22, Carnation; last foal at 25, Reflex (ran as a 2 and 3 year-old, won once).
96	Noisette by Nutwith out of Marmora.	1850	2—9 year-old ran 91 times, won 17 times. Won once as an 8 year-old. As a 9 year-old, in foal, ran four times without winning. First foal at 10 years old. 9 foals, amongst which was Acceptance, Foundation Mare in Fam. 2. Last foal at 21.
97	Miss Agnes by Birdcatcher out of Agnes.	1850	Ran 2—4 year-old, won once. First foal at 6 years old. 16 foals, amongst which were six prominent Foundation Mares. At 23, Agnes Sorel, Foundation Mare in Fam. 16. Lived to 27 years of age.
98	Torment by Alarm—Glencoe.	1850	As a 2 and 3 year-old a very good racer. First foal at 5 years old. 14 foals, including living twins, B Flat and F Sharp, 7 Foundation Mares in Fam. 10, Tormentor O, and at 22, Peine de Cœur (dam of Despair and Carissima).

No.	Name and Pedigree.	Born.	Breeding Performances.
99	Blue Bell by Heron—Zimmerman.	1851	Not run. First foal at 5 years old. 14 foals. 3 Foundation Mares in Fam. 25. At 25, Aura (dam of Orcan). Lived to 34 years of age.
100	Nelly Hill by Springy Jack out of Anne Page.	1851	Ran 2—4 year-old and won as a 3 year-old four times. First foal at 6 years old. 14 foals. At 23, Jessie, Foundation Mare in Fam. 17.
101	Katherine Logie by Flying Dutchman out of Phryne.	1853	Ran 3—6 year-old 61 times and won 11 times. First foal at 8 years old. 13 foals, among which were: Bothwell 2, King o' Scots, and at 23, Pompeja, Foundation Mare in Fam. 3.
102	Christabelle by Fernhill—Beiram.	1854	Not run. First foal at 5 years old. 17 foals, amongst which were three Foundation Mares in Fam. 3 c. At 23, Sorcery (dam of Aspirant OD, and See Me OO).
103	Bathilde Cm. by Stockwell out of Babette.	1858	Ran 2—6 year-old 24 times, won 5 times. First foal at 8 years old. 14 foals. At 20, Lowland Chief, and at 24, Queen Bathilde, Foundation Mare in Fam. 23.
104	Anonyma by Stockwell out of Miss Sarah.	1859	Ran 2—5 year-old 14 times, won 4 times. First foal at 7 years old. 15 foals, amongst which were four Foundation Mares in Fam. 21. At 23, Lonely O, and at 24, Hawkstone.
105	Lady Sefton by West-Australian out of Clarissa.	1861	Ran once as a 2 and once as a 3 year-old. First foal at 5 years old. 14 foals, amongst which were: Sefton D, two Foundation Mares in Fam. 25, and at 24, Quid Pro Quo by Isonomy.
106	Palmflower by The Palmer out of Jenny Driver (had 20 foals).	1874	Ran 2—4 year-old 13 times, and won 4 times as a 2 year-old. First foal at 7 years old. 17 foals without a break, amongst which were: El Dorado, St. Florian, three Foundation Mares in Fam. 20; at 22, Musa O, and at 23, Palmaro (ran and won as a 2 and 3 year-old).

Special Breeding Performances of Old Thoroughbred Mares from abroad.

No.	Name and Pedigree.	Born.	Breeding Performances.
1	Vittoria by Milton out of Geane, Meudon Stud in France, owned by L. Napoleon.	1823	First foal at 7 years old. 18 foals, amongst which were: Nautilus Cd. three times, and Romulus F.D., at 23, Vergogne F.O., at 25, last foal.

No.	Name and Pedigree.	Born.	Breeding Performances.
2	Miss Furey by Whalebone — Soothsayer.	1824	At 25, Donna Sol (dam of Negresse), Fam. 18.
3	Maid of Honor by Champion out of Etiquette.	1829	At 22, Kohinoor U., at 23, Darinoor, Fam. 14.
4	Mermaid by Whalebone out of Miss Emma.	1829	At 23, Seahorse Hr., Fam. 12.
5	Ivory by Humphrey Clinker out of Ildegarda.	1832	At 29, Collingwood H. U.
6	Jessy by Emancipation out of Eliza.	1835	At 24, Belle Etoile, Fam. 25.
7	Alice Carneal by Sarpedon out of Rowena.	1836	12 foals, amongst which were Lexington; at 21, Umpire, and at 23, Annette. Fam. 12 a.
8	Dolphin by Priam out of Mermaid.	1836	At 20, Shark Hn., and at 22, Chingachgook. Fam. 12.
9	Victoria by Elizondo—Saracen.	1840	At 22, Vera Crux, and at 23, Victorieuse F.O. Fam. 1 c.
10	Bathilde by Y. Emilius out of Odine.	1842	At 24, Orpheline (dam of Fra Diavolo, F.L.). Fam. 5 a.
11	Ennui by Bay Middleton out of Blue Devils.	1843	14 foals, amongst which were Saunterer and Loiterer; at 24, Constance. Fam. 11.
12	Belle de Nuit by Y. Emilius out of Odine.	1844	At 23, Good-Night (dam of Pourquoi Gl.). Fam. 5 a.
13	Officious by Pantaloon out of Baleine.	1847	At 21, Dami B.B., at 22, H. Mästro B.B. Fam. 8 a.
14	Sunrise by Emilius out of Sunset.	1848	At 23, Succes. Fam. 3.
15	Partlet by Birdcatcher out of Gipsy.	1849	At 25, Patriarche. Fam. 19.
16	Vermeille by The Baron out of Fair Helm.	1853	13 foals, amongst which were: Vermouth G.P., B.B., and Vertugadin Gl., B.B., at 24, Extra (dam of Excuse Cd.). Lived to 29 years of age. Fam. 3 b.

No.	Name and Pedigree.	Born.	Breeding Performances.
17	Thrift by Stockwell out of Braxey.	1865	Covered 3 years old. 17 foals and once twins; at 24, Avoir. Fam. 10.
18	Clotho RO. by Bois Roussel out of Lady Clocklo.	1866	At 20, Cleodore Prd., at 25, Clôture. Fam. 8 a.

The Thoroughbred also seems to have the superiority over the Half-bred as regards longevity, as can be seen from the three following lists.

Of the Half-breds known to me, the Royal Country Stallions in Celle have reached by far the greatest age, but even these are inferior to the Thoroughbred regarding their maximum performances, etc., as the last of the three tables following shows.

Register of the Thoroughbred Stallions born in England which have attained the age of 25 years and more.

No.	Names of Stallions.	Born.	Sires of Stallions.	Age reached. Years.
1	The Lister Turk	abt. 1680	——	abt. 32
2	Jigg	abt. 1702	Byerly Turk	abt. 28
3	Bay Bolton	1705	Grey Hautboy	31
4	The Belgrade Turk	abt. 1710	——	abt. 30
5	Flying Childers	1715	Darley Arabian	26
6	Partner	1718	Jigg	29
7	Crab	1722	Alcock's Arabian	28
8	The Godolphin Arabian	1724	——	29
9	Monkey	1725	Lonsdale Bay Arabian	29 A.
10	The Bolton Starling	1727	Bay Bolton	29
11	Young Cartouch	1731	Cartouch	28
12	Sedbury	1734	Partner	25
13	The Ancaster Starling	1738	Starling	26
14	Regulus	1739	Godolphin Arabian	26
15	Blank	1740	Godolphin Arabian	29
16	Jolly Roger	1741	Roundhead	31 A.
17	Sampson	1745	Blaze	32
18	Janus	1746	Janus	34 A.
19	Matchem	1748	Cade	33
20	Marske	1750	Squirt	29
21	Snap	1750	Snip	27
22	Syphon	1750	Squirt	least 25
23	The Godolphin Colt	1754	Godolphin Arabian	27
24	Matchless	1754	Godolphin Arabian	abt. 32 A.

No.	Names of Stallions.	Born.	Sires of Stallions.	Age reached. Years.
25	Squirrel	1754	Traveller	26
26	Engineer	1756	Sampson	26
27	Centinel	1758	Blank	26 A.
28	Jalap	1758	Regulus	29
29	Bay Malton	1760	Sampson	26
30	Tantrum	1760	Cripple	least 26
31	Coriolanus	1762	Whistlejacket	least 29
32	Morwick Ball	1762	Regulus	25
33	Pilgrim	1762	Sampson	26
34	Chrysolite	1763	Blank	25
35	Pacolet	1763	Blank	25
36	Ranthos	1763	Matchem	31
37	Eclipse	1764	Marske	25
38	Goldfinder	1764	Snap	25
39	Phlegon	1765	Matchem	25
40	Trentham	1766	Sweepstakes	abt. 26
41	Faggergill	1766	Snap	25
42	Paymaster	1766	Blank	25
43	Solon	1766	Sampson	27
44	Shark	1771	Marske	25 A.
45	Young Marske	1771	Marske	29
46	PotSos	1773	Eclipse	27
47	Woodpecker	1773	Herod	25
48	Jupiter	1774	Eclipse	28
49	King Fergus	1775	Eclipse	26
50	Weasel	1776	Herod	25
51	Diomed	1777	Florizel	31 A.
52	Drone	1777	Herod	29 A.
53	Ruler	1777	Y. Marske	30
54	Dungannon	1780	Eclipse	28
55	Messenger	1780	Mambrino	28 A.
56	Delpini	1781	Highflyer	27
57	Alexander	1782	Eclipse	29
58	Trumpator	1782	Conductor	26
59	Driver	1783	Trentham	28
60	Meteor	1783	Eclipse	28
61	Windlestone	1783	Magnet	29
62	Sir Peter	1784	Highflyer	27
63	Star	1785	Highflyer	26 A.
64	Traveller	1785	Highflyer	28
65	Competitor	1786	Eclipse	30
66	Cocker	1786	Trentham	26
67	Grog	1786	Tandem	27
68	Star	1786	Highflyer	25 A.
69	Dragon	1787	Woodpecker	25 A.

No.	Names of Stallions.	Born.	Sires of Stallions.	Age reached. Years.
70	Gohanna	1790	Mercury	25
71	Waxy	1790	Pot8os	28
72	Parrot (ran 2—5 years 28 times and won 9 times)	1791	Dungannon	36 D.
73	Diamond	1792	Highflyer	27 F.
74	Hambletonian	1792	King Fergus	26
75	King Bladud	1792	Fortunio	27
76	Stamford	1794	Sir Peter	26
77	Whip	1794	Saltram	31 A.
78	Bobtail	1795	Precipitate	27
79	Eagle	1796	Volunteer	30 A.
80	Sorcerer	1796	Trumpator	25
81	Quiz	1798	Buzzard	28
82	Orlando	1799	Whiskey	25
83	Orville	1799	Beningbrough	27
84	Walton	1799	Sir Peter	26
85	Remembrancer	1800	Pipator	29
86	Sir Oliver	1800	Sir Peter	29
87	Castrel	1801	Buzzard	26
88	Sir David	1801	Trumpator	27 R.
89	Sir Walter Raleigh	1801	Waxy	30
90	Grimaldi	1802	Delpini	28
91	Fyldener	1803	Sir Peter	26
92	Hollyhock	1804	Master Bagot	25
93	Waxy Pope	1806	Waxy	25
94	Ad Libitum	1807	Whiskey	30 F.
95	Bluster	1808	Orlando	26 A.
96	Grimalkin	1808	Chance	26 D.
97	Hamlet	1808	Hambletonian	27 F.
98	Phantom	1808	Walton	26 D.
99	Rainbow	1808	Walton	26 F.
100	Comus	1809	Sorcerer	28
101	Muley	1810	Orville	27
102	Tramp	1810	Dick Andrews	25
103	Bijou	1811	Orville	25 F.
104	Dr. Syntax	1811	Paynator	27
105	Captain Candid	1813	Cerberus	25 F.
106	Elector	1813	Election	25 D.
107	The Cryer	1814	Sorcerer	28 D.
108	Gaudy	1814	Peruvian	27 D.
109	Talma	1814	Sorcerer	28 R.
110	Allegro	1815	Orville	29 R.
111	Oracle	1815	Sorcerer	27 D.
112	Spectre	1815	Phantom	26 F.
113	Dr Eady	1816	Rubens	26

No.	Names of Stallions.	Born.	Sires of Stallions.	Age reached. Years.
114	Tandem	1816	Rubens	25 F.
115	Cavalier	1817	Lambton	27 D.
116	Parchement or Tring	1817	Thunderbolt	25 F.
117	St. Patrick	1817	Walton	26
118	Trance	1817	Phantom	29 F.
119	Minister	1818	Prime Minister	26 F.
120	Belmout	1819	Thunderbolt	29 F.
121	Marcellus	1819	Selim	25 F.
122	Abrou	1820	Whisker	25 F.
123	Emilius	1820	Orville	27
124	General Mina	1820	Camillus	26 F.
125	Lottery	1820	Tramp	25 F.
126	Middleton	1822	Phantom	25 R.
127	Sir Geoffrey Peveril	1823	Whalebone	25 D.
128	Royal Oak	1823	Çatton	26 F.
129	Mameluke	1824	Partisan	25 F.
130	Pantaloon	1824	Castrel	26
131	Terror	1825	Magistrate	25 F.
132	Velocipede	1825	Blacklock	25
133	Aaron	1826	Moses	26 AU.
134	Lawnsleeves	1826	Dr. Syntax	25 R.
135	Sir Hercules	1826	Whalebone	29
136	Birmingham	1827	Filho da Puta	27 R.
137	Giovanni	1828	Filho da Puta	26
138	Minster	1829	Catton	26 F.
139	Trustee	1829	Catton	27 A.
140	Emigrant	1831	Tramp	25 AU.
141	General Chasse	1831	Actaeon	25 R.
142	Glencoe	1831	Sultan	26 A.
143	Touchstone	1831	Camel	30
144	Safeguard	1832	Defence	26
145	Sheet Anchor	1832	Lottery	31 D.
146	Birdcatcher	1833	Sir Hercules	27
147	Langford	1833	Sir Hercules	25 D.
148	Slane	1833	Royal Oak	25
149	Y. Confederate	1834	Confederate	25 D.
150	Harkaway	1834	Economist	25
151	Melbourne	1834	Humphrey Clinker	25
152	Mickle Fell	1834	Catton	28 D.
153	Yorkshire	1834	St. Nicolas	25 A.
154	Sportsman	1835	Flexible	25 D.
155	Bloomsbury	1836	Mulatto	25 D.
156	Oroonocko	1836	Camel	26 D.
157	Polydorus	1836	Priam	25 D.
158	Sampson	1836	Cetus	25 D.

No.	Names of Stallions.	Born.	Sires of Stallions.	Age reached. Years.
159	Sovereign	1836	Emilius	26 A.
160	St. Swithin	1837	Velocipede or St. Nicholas	27 D.
161	Alonzo	1837	Alpheus	28
162	Satirist	1838	Pantaloon	26 D.
163	Consternation	1841	Confederate	25 A.
164	The Cure	1841	Physician	25
165	Orlando	1841	Touchstone	27
166	Weatherbit	1842	Sheet Anchor	26
167	King of Naples	1844	Slane	28 D.
168	Springy Jack	1845	Hetman Platoff	25 D.
169	Surplice	1845	Touchstone	26
170	Voltigeur	1847	Voltaire	27
171	Harpsichord	1848	Touchstone	26 D
172	Stilton	1849	Cotherstone	26 D.
173	Captain Cornish	1850	Jago	25 D.
174	Sittingbourne	1850	Chatham	27 D.
175	Arthur Wellesley	1851	Melbourne	25
176	Epaminondas	1851	Epirus	25 D.
177	King Tom	1851	Harkaway	27
178	Marsyas	1851	Orlando	25
179	Professor Airey	1852	Mathematician	27
180	Bonnie Scotland	1853	Jago	27 A.
181	Cotswold	1853	Newcourt	26 O.
182	Forbidden Fruit	1853	Birdcatcher	29 O.
183	Kentucky	1853	Mickey Free	31 D.
184	Leamington	1853	Faugh-a-Ballagh	25 A.
185	Amsterdam	1854	The Flying Dutchman	25
186	The Attorney General	1854	Melbourne	26 D.
187	Gunboat	1854	Sir Hercules	29
188	Wardermarske	1854	Birdcatcher	26 D.
189	Kelpie	1855	Weatherbit	27 AU.
190	Flash in the Pan	1856	Pontifex	25
191	Gaspard	1856	Daniel O'Rourke	26 D.
192	The Speaker	1856	Filbert	25
193	Athos	1857	Prime Minister	25 AU.
194	Buccaneer	1857	Wild Dayrell	30 O.
195	Mainstone	1857	King Tom	28
196	Thunderbolt	1857	Stockwell	31
197	Carbineer	1858	Rifleman	25
198	Don John	1858	Wild Dayrell	25
199	Kettledrum	1858	Rataplan	27 O
200	Drummer Boy	1859	Rataplan	28 D.
201	The Marquis	1859	Stockwell	27 AU.
202	Victor	1859	Vindex	27
203	Conrad	1860	Kingston	25 AU.
204	Grimston	1860	Stockwell	26 D.
205	Macaroni	1860	Sweetmeat	27

No.	Names of Stallions.	Born.	Sires of Stallions.	Age reached. Years.
206	Mail Train	1861	Grosvenor	27 AU.
207	The Dart	1863	Lord Fauconberg	25
208	Lecturer	1863	Colsterdale	25
209	Vespasian	1863	Newminster	27 AU.
210	Xi	1863	General Williams	26 D.
211	Friponnier	1864	Chevalier d'Industrie	25 D.
212	Hermit*	1864	Newminster	26
213	Pathfinder	1864	Thormanby	29 D.
214	Tibthorpe	1864	Voltigeur	26
215	Tynedale	1864	Warlock	26
216	Bold Dayrell	1865	Wild Dayrell	26
217	Rosicrucian	1865	Beadsman	26
218	Tregeagle	1865	Wild Dayrell	26 AU.
219	The Drummer	1866	Rataplan	26 AU.
220	Dutch Skater	1866	The Flying Dutchman	25
221	Goldfinsch	1866	Audubon	26
222	The Bobby	1867	Loiterer	26
223	King Cole	1867	King Tom	26 AU.
224	Lord Glasgow	1867	Rapid Rhone	25 D.
225	Syrian	1867	Mentmore	26
226	Grandmaster	1868	Gladiateur	31 AU.
227	Rapture	1869	Dioplantus	25 A.
228	Anteros	1870	Loiterer	25 AU.
229	Gang Forward	1870	Stockwell	28 AU.
230	Ascetic	1871	Hermit	26
231	Controversy	1871	Lambton or The Miner	25
232	George Frederick	1871	Marsyas	25 A.
233	Friar Tuck	1872	Hermit	27 A.
234	Galopin	1872	Vedette	27
235	Hampton	1872	Lord Clifden	25
236	The Muleteer	1873	Mogador	26
237	Spendthrift	1873	Blair Athol	27
238	Springfield	1873	St. Albans	25
239	Umpire	1873	Tom King	26
240	Midlothian	1874	Rataplan or Strathconan	28 A.
241	Beauclerc	1875	Rosicrucian	25
242	Thurio	1875	Tibthorpe or Cremorne	27
243	Charaxus	1876	Distin	26 A
244	Bend Or	1877	Doncaster	26
245	Prestonpans	1877	Prince Charlie	27 A.
246	Leamington	1878	Faugh-a-Ballagh	25 A.
247	Despair	1879	See Saw	25
248	St. Simon	1881	Galopin	27
249	Kendal	1883	Bend 'Or	25 A.

A—Died in America. D—Died in Germany. F—Died in France.
O—Died in Austria. R—Died in Russia. AU—Died in Australia.

*In General Stud Book, Vol. XVII., page 938, the age of Hermit is wrongly given as 29 years.

Register of the Thoroughbred Stallions born in America which have attained the age of 25 years and more.

1. Celler 1776 by Janus was 28 years old.
2. Jolly Friar 1783 by Janus ,, 25 ,, ,,
3. Old Friendship 1783 by Apollo ,, 33 ,, ,,
4. Centinel 1800 by Diomed ,, 25 ,, ,,
5. Peacemaker 1800 by Diomed ,, 27 ,, ,,
6. Sir Archy 1805 by Diomed ,, 28 ,, ,,
7. Eclipse 1814 by Duroc ,, 33 ,, ,,
8. Manalopan 1828 by Johnson's Medley ,, 25 ,, ,,
9. Wagner 1834 by Sir Charles ,, 28 ,, ,,
10. Grey Eagle 1835 by Woodpecker ,, 28 ,, ,,
11. Y. Langford 1840 by Langford ,, 35 ,, ,,
12. Revenue 1843 by Trustee ,, 25 ,, ,,
13. Star Davis 1849 by Glencoe ,, 27 ,, ,,
14. Lexington 1850 by Boston ,, 25 ,, ,,
15. Wild Irishman 1850 by Glencoe ,, 26 ,, ,,
16. Brown Dick 1851 by Margrave ,, 28 ,, ,,
17. Rifleman 1855 by Glencoe ,, 28 ,, ,,
18. Asteroid 1861 by Lexington ,, 25 ,, ,,
19. Norfolk 1861 by Lexington ,, 29 ,, ,,
20. Ansel 1862 by Lexington ,, 29 ,, ,,
21. Baltimore 1862 by Revenue ,, 26 ,, ,,
22. Morris 1863 by Lexington ,, 26 ,, ,,
23. Pat Malloy 1865 by Lexington ,, 25 ,, ,,
24. Vauxhall 1865 by Lexington ,, 25 ,, ,,
25. Exchange 1866 by Endorser ,, 25 ,, ,,
26. Glenelg 1866 by Citadel ,, 31 ,, ,,
27. Enquirer 1867 by Leamington ,, 28 ,, ,,
28. Longfellow 1867 by Leamington ,, 26 ,, ,,
29. Lyttleton 1867 by Leamington ,, 26 ,, ,,
30. Regent 1867 by Bonnie Scotland ,, 25 ,, ,,
31. Bigaroon 1868 by Bonnie Scotland ,, 25 ,, ,,
32. Eolos 1868 by Leamington ,, 29 ,, ,,
33. Nathan Oaks 1868 by Bonnie Scotland ,, 26 ,, ,,
34. Spindrift 1868 by Bonnie Scotland ,, 25 ,, ,,
35. Joe Daniels 1869 by Australian ,, 27 ,, ,,
36. Springbok 1870 by Australian ,, 27 ,, ,,
37. Grinstead 1871 by Gilroy ,, 25 ,, ,,
38. Big Sandy 1872 by Australian ,, 25 ,, ,,
39. Fiddlesticks 1874 by Lexington ,, 26 ,, ,,
40. Himyar 1875 by Alarm ,, 30 ,, ,,
41. Falsetto 1876 by Enquirer ,, 28 ,, ,,

42. The Jacobite 1876 by Prince Charlie was 29 years old.
43. Irish King 1876 by Longfellow ,, 25 ,, ,,
44. Foxhall 1878 by King Alfonso ,, 26 ,, ,,
45. Onondaga 1879 by Leamington ,, 25 ,, ,,

Register of the Royal Country Stallions in Celle which attained the age of 25 years and more.

No.	Name of Stallion	Born.	Sire.	Age reached. Years.
1	Prevenant	1788	unknown	27
2	Unique	1798	Unique	26
3	Y. Ambush	1811	Ambush II.	29
4	Faustinus	1815	Kitzlichen	31
5	Torador	1817	Grossvenor xx	26
6	Nil	1820	Gilfi	32
7	Tancred II.	1821	Herodot xx	26
8	Diomed	1822	Stallion in Ivenack	25
9	Bundler	1824	Coriander xx	26
10	Dorado	1824	Aly	28
11	Gomul	1824	Antonius	27
12	Whisker	1824	Gilfi, Araber	27
13	Brigadier	1825	Romano	26
14	Gallas	1825	Gallas	26
15	Goblet	1825	Y. Bobtail	25
16	Hotspur	1825	Oberon	27
17	Paroli	1825	Y. Sebastian	29
18	Malcolm	1826	Ambaldo xx	27
19	Trajan	1826	Anthrax	27
20	Abelard	1827	Ambaldo xx	25
21	Britannicus	1827	Adrast xx	25
22	Bucephalus	1827	Ambaldo xx	25
23	Helote	1827	Robin Hood xx	28
24	Phönix	1827	Robin Hood xx	30
25	Mambrino II.	1828	Rubello	26
26	Radical	1828	Y. Sebastian	25
27	Beiram	1829	Hercules	28
28	Mameluck	1829	Anthrax	26
29	Montrose	1830	Hanibal	26
30	Robuste	1831	Morisco xx	25
31	Claret	1833	Cavalier xx	28
32	Fiesco I.	1833	Ivanhoe	25
33	Muff	1834	Brutandorf xx	26
34	Musquito	1834	Babram xx	26
35	Negociator	1834	Cavalier xx	25
36	Hector II.	1835	Tancred	27
37	Heron	1835	Cavalier xx	25

No.	Name of Stallion	Born.	Sire.	Age reached. Years.
38	Hermes	1838	unknown	26
39	Mercur	1838	unknown	25
40	Cabrera	1839	Gomez xx	25
41	Client	1839	Protector	26
42	Farmer	1839	Morisco	24
43	Ragazzo	1839	Gustavus xx	26
44	Standard	1839	Cavalier xx	25
45	Walter Scott	1839	Sir Walter	26
46	Dromedar	1840	Crown Prince	27
47	Magnet	1840	Grey Orville	25
48	Alliwal	1842	unknown	28
49	Ajax	1843	Crab xx	27
50	Norfolk	1843	Y. Seymour	28
51	Cardinal	1844	Neptun	26
52	Ebor	1844	unknown	26
53	Iwan	1844	Demetrius xx	26
54	Ninus	1844	Belus xx	28
55	Palafox	1845	Palafox	26
56	The Smuggler	1845	Black Shales	26
57	Zernebog	1845	Jupiter xx	26
58	Telegraph	1848	Apropos	26
59	Totness	1848	unknown	25
60	Ulysses II.	1848	Neptun	27
61	Baucher	1849	Cardinal	26
62	Champion	1849	Coachman	27
63	Martaban	1850	Sampson xx	26
64	Blue Bird	1851	Phönix	29
65	Cregane	1852	Old Cregane	28
66	Nathan	1854	Y. Gameboy	25
67	Alhambra	1855	Sebras	27
68	Harry	1856	Beiram	26
69	Jason	1857	Sheridan xx	28
70	Martell	1858	Gladiator	25
71	Flick	1861	Zernebog	26
72	Zampa	1861	Predictor	25
73	Watson	1864	Holderness	25
74	Kahland	1865	Champion	28
75	Altona	1866	Y. Rustic	25
76	Nord	1866	Norfolk	26
77	Süd	1866	Norfolk	29
78	Jeremias	1866	The Prophet	27
79	Folk	1867	Norfolk	26
80	Kumpan	1868	Champion	25
81	Weissenburg	1869	Norfolk	26
82	Y. Claringo	1869	Claringo	25

No.	Name of Stallion.	Born.	Sire.	Age reached. Years.
83	Averberg	1870	Norfolk	26
84	Nadock	1870	Norfolk	27
85	Tellus	1871	Duplicat	25
86	Y. Norfolk	1871	Norfolk	26
87	Norman	1871	Norfolk	26
88	Nornick	1871	Norfolk	25
89	Nordlicht	1872	Norfolk	29
90	Norval	1872	Norfolk	26
91	Figaro	1873	Flick	27
92	Granada	1873	Alhambra	28
93	Derwisch	1874	Lord Derby	25
94	Nording	1875	Nord	28
95	Jessick	1876	Jeremias	25
96	Juli	1877	Julius	27
97	Augur II.	1878	Belfort xx	27
98	Jaspis	1878	Jason	26
99	Julianus	1878	Julius	26

The following instances of the performances of 20 year-old and older Thoroughbred stallions in the production of first-class racing and breeding stock show very clearly that a great age in Thoroughbreds is no detriment to a good heredity power. In this respect other light breeds, and more particularly heavy breeds, are a long way behind Thoroughbreds.

No.	Name of the Stallions.	Born.	Age.	Produced the following progeny.
1	Byerly Turk	1680	21	Jigg and Basto
2	Flying Childers	1715	20	Snip
			22	Brown Basto, Fam. 9. 6
3	Partner	1718	21	Little John
			21	Jenny Spinner, Fam. 12 b. 9
			22	Mare born 1740, Fam. 4. 7
			23	Calia, Fam. 23. 6
			23	Mare born 1742, Fam. 4. 8
			24	Lady Thigh, Fam 4 a. 8
			24	Tartar
			26	Mare born 1744, Fam. 4. 8.
			27	Harris' Eclipse (America)
			28	Mare born 1747, Fam. 23. 6
			29	Mare born about 1748, Fam. 37. 8
4	Hobgoblin	1724	20	Shakespeare

No.	Name of the Stallions.	Born.	Age.	Produced the following progeny.
5	Godolphin Arabian	1724	23	Sophia, Fam. 21. 5
			25	Cripple
			28	Daphne, Fam. 33. 5
			29	Miss Windsor, Fam. 18. 7 (Later Silvia)
			29	Matchless (lived to 32 years of age)
6	Regulus	1739	21	Miss Ingram, Fam. 19. 7
			22	Morwick Ball
			23	Queen Elisabeth, Fam. 37. 8 (Dam of Bourbon L)
			23	Figurante, Fam. 1. 9
			23	A-la-Grecque, Fam. 23. 9
			24	Phoebe (Dam of Eclipse in America)
7	Blank	1740	20	Ruth, Fam. 13. 8
			20	Cloudy, Fam. 4. 10
			21	Principessa, Fam. 12 a. 11
			21	Mare born 1762, Fam. 1. 9
			22	Sappho, Fam. 36. 4
			22	Mare born 1763, Fam. 2. 10
			22	Pacolet
			23	Sophia, Fam. 13. 9
			23	Rachel (Dam of Herod), Fam. 13. 8
			24	Charmer, Fam. 13. 8
			24	Lily, Fam. 4. 10
			24	Mare born about 1765, Fam. 2. 11
			25	Paymaster
			26	Ancaster Nancy
			28	Cunegonde, Fam. 42. 7
			28	Rantipole, Fam. 32. 8
			28	Rutilia, Fam. 13 a. 8
			28	Mare born 1769, Fam. 4 a. 10
			28	Mare born 1769, Fam. 37. 9
8	Old England	1741	24	Mare born 1766, Fam. 2. 11 (Dam of Imperatrix L)
9	Turner's Sweepstakes	1743	22	Trentham
			22	Mare born about 1766, Fam. 8. 10
10	Sampson	1745	20	Cantatrice born about 1766, Fam. 8. 10 (Dam of Termagant)
			27	Alabaculia L, Fam. 4. 9
			28	Flycap born about 1774
11	Matchem	1748	20	Giantess, Fam. 6. 10
			20	Mare born 1769, Fam. 31. 7

No.	Name of the Stallions.	Born.	Age.	Produced the following progeny.
			20	Echo, (?) Fam. 23. 8
			21	Alfred
			22	Monimia, Fam 1. 10
			24	Magnum Bonum
			24	Mare born 1773, Fam. 2. 11
			25	Purity, Fam. 24. 8 (Dam of Rockingham)
			25	Mare born 1774, Fam. 2 f. 9
			25	Mare born 1774, Fam. 21. 7
			26	Espersykes
			26	Hollandaise L
			28	Tetotum O, Fam. 26. 7 (Firstling)
			28	Sincerity Fam. 3. 7 (Firstling)
			28	Puzzle, Fam. 1 a. 10 (lived to 32 years of age)
			28	Miss West (Dam of Quiz L by Huby)
			28	Cora, Fam. 23 a. 11
			28	Orange Girl, Fam. 31. 7
			28	Mare born 1777, Fam. 4 a. 9
			28	Mare born 1777, Fam. 9 b. 9
			28	Mare born 1777, Fam. 15. 9
			28	Mare born about 1777, Fam. 18. 9
12	Marske	1750	20	Y. Marske
			20	Folly, Fam. 8 c. 10
			20	Magnolia, Fam. 5. 6
			20	Mare born 1771, Fam. 4 b. 11
			22	Mare born 1773, Fam. 23. 10
			23	Mare born 1774, Fam. 17. 9
13	Snap	1750	20	Madcap, Fam. 15. 7
			21	Lisette, Fam. 18. 8
			21	Middlesex, Fam. 3. 6
			23	Miss Euston, Fam. 13. 9
			23	Mare born 1774, Fam. 24. 9
14	Syphon	1750	20	Mare born 1771, Fam. 17. 9 (had 15 foals)
			21	Mare born 1772, Fam. 15. 7 (Dam of Tommy L)
			21	Mare born 1772, Fam. 43. 7 (had 16 foals—first foal at 11 years old)
			22	Tandem
			24	Miss Pratt, Fam. 31. 7
15	Wildair	1753	22	Tommy L
16	Herod	1758	20	Expectation, Fam. 4. 12
			20	Luna, Fam. 12. 8
			20	Mare born 1779, Fam. 4 a. 10
			20	Mare born 1779, Fam. 24. 9
			20	Mare born 1779, Fam. 37. 10

No.	Name of the Stallions.	Born.	Age.	Produced the following progeny.
			21	Phoenomenon L
			21	Bagot
			21	Maid of the Oaks O, Fam. 3 b. 7
			21	Macaria, Fam. 4. 9
			21	Mare born 1780, Fam. 5 a. 6
			21	Mare born 1780, Fam. 5 a. 7
			21	Mare born 1780, Fam. 5 c. 6
			21	Mare born 1780, Fam. 7. 6
			22	Editha, Fam. 3. 6
17	Eclipse	1764	20	Queen Mab, Fam. 9 b. 9 (out of the 28-year-old Tartar Mare)
			20	Violot, Fam. 13. 11
			21	Bobtail, Fam. 3 b. 7
			21	Serpent
18	Florizel	1768	20	Tartar L
			20	Lucy, Fam. 2. 13
			21	Ninety-Three L
19	Y. Marske	1771	21	Shuttle
			22	Mare born 1794, Fam. 2. 12
			22	Mare born 1794, Fam. 23. 11
			23	Mare born 1795, Fam. 8 d. 12
20	Pot8os	1773	20	Mare born 1794, Fam. 1 12
			20	Mare born 1794, Fam. 3 e. 7
			22	Mare born 1796, Fam. 17. 11
			23	Champion D and L
			24	Dabschick, Fam. 12. 10
			25	Tyrant D
			25	Grey Duchess, Fam. 6. 11 (had 19 foals, and lived to be 28 years old)
21	Woodpecker	1773	20	Chesnut Skim, Fam. 5 d. 7
			20	Mare born 1794, Fam. 11. 9
			21	Catherine, Fam. 11 b. 9 (Dam of Golumpus by Gohanna)
			23	Ephemera O, Fam. 3 b. 18
			24	Mare born 1798, Fam. 6. 12
			24	Mare born 1798, Fam. 12 a. 13
			24	Mare born 1798, Fam. 24. 10
22	Diomed	1777	23	Ball's Florizel
			27	Sir Archy
			28	Duroc
23	Saltram	1780	24	Mare born 1805 (Dam of Timoleon)
24	Alexander	1782	20	Persepolis, Fam. 12. 10
			22	Berenice, Fam. 3 b. 9

No.	Name of the Stallions.	Born.	Age.	Produced the following progeny.
			22	Berenice, Fam. 14. 10
			24	Boadicea, Fam. 14. 10
			26	Thalestris, Fam. 2 c. 15
			27	Delta, Fam. 2 f. 14
25	Trumpator	1782	20	Mare born 1803, Fam. 9. 10
			21	Woodnymph, Fam. 4 b. 14
			23	Mirth, Fam. 26. 9
			25	Pawn, Fam. 1 d. 11
			26	Prue, Fam. 11. 10
26	Don Quixote	1784	21	Cervantes
			21	Pea Blossom, Fam. 12 a. 16
			21	Zoraida, Fam. 25. 10
			22	Amadis
27	Sir Peter	1784	20	Petronius L
			20	Clinker (2nd in L.)
			20	Isis, Fam. 2 f. 13
			20	Plover, Fam. 27. 10
			21	Peruvian
			21	Fadladinida, Fam. 13. 11
			21	Jametta, Fam. 1. 14
			21	Opal, Fam. 3 b. 7
			21	Zaida, Fam. 25. 9
28	Waxy	1790	20	Blücher D
			20	Wire, Fam. 1 b. 12 (had 17 foals)
			20	Prudence, Fam. 1 b. 11
			21	Whisker D
			21	Minuet O, Fam. 1 a. 12
			24	Corinne O, Fam. 2. 16
			24	Loo, Fam. 1 b. 12
			24	Mare born 1815, Fam. 3 a. 10
			24	Mare born 1815, Fam. 23. 13
			26	Duchess of York, Fam. 5 d. 9
			26	Emmeline, Fam. 12 a. 16
			26	Pawn, Jun., Fam. 1 d. 12
			27	Dulcamara, Fam. 12 a. 16
29	Gohanna	1790	21	Wasp, Fam. 3 d. 8
			23	Harpalice, Fam. 3 c. 10
			23	Mare born 1814, Fam. 5 a. 9
30	Hambletonian	1792	20	Mare born 1813, Fam. 8 c. 15
			23	Cherub, Fam. 16. 6
31	Stamford	1794	20	Chromatica, Fam. 18. 13
			22	Hambletonia, Fam. 18. 13
			25	Mare born about 1820, Fam. 4 b. 14

No.	Name of the Stallions.	Born.	Age.	Produced the following progeny.
32	Sorcerer	1796	20	Mare born 1817, Fam. 18. 12
33	Haphazard	1797	20	Hazardess, Fam. 10 b. 7
			21	Figaro
34	Quiz	1798	20	Arbis, Fam. 12. 11
			20	The Odd Trick, Fam 6. 12
			22	Globe, Fam. 5 c. 9
			25	Arethissa, Fam. 12. 11
35	Orville	1799	20	Bizarre
			20	Emilius D
			20	Etiquette, Fam. 14 11
			21	Georgina, Fam. 32. 12
			24	Souvenir, Fam. 12 a. 17
			24	Edmund
			25	Manille, Fam. 1 b. 13
			25	Zoe, Fam. 11. 12
			26	Mare born 1826, Fam. 19. 12
			27	Mare born 1827, Fam. 11 b. 11
			27	Mare born 1827, Fam. 19 a. 11
36	Walton	1799	20	Miss Fanny, Fam. 12. 12
			21	The Twinkle, Fam. 19. 12
			21	Mare born 1821, Fam. 25. 11
			23	Galena, Fam. 23. 14
			23	Miss Patrick, Fam. 4 b. 16
			23	Mrs. Fry, Fam. 15. 11
			23	Mare born 1823, Fam. 19. 11
			23	Mare born 1823, Fam. 9 b. 12
			24	Miss Emma, Fam. 12. 12
			25	Rosalia, Fam. 19 a. 11
37	Castrel	1801	21	Castrellina, Fam. 3 a. 11
			22	Pantaloon
38	Selim	1802	20	Nanine, Fam. 3 a. 10 (Dam of Glaucus)
			21	Mare born 1824, Fam. 9 b. 11
			22	Turquoise O, Fam. 1 b. 12
39	Whalebone	1807	20	Spaniel D
			20	Miss Petworth, Fam. 3 c. 11
			20	Naiad, Fam. 9. 12
			21	Dryad, Fam. 3 c. 11
			21	Gretna Green, Fam. 3 c. 11
			21	Mermaid, Fam. 12. 13
			22	Myrrha, Fam. 10. 8
			22	Baleine, Fam. 8 c. 16
			23	Bodice, Fam. 8 c. 16
			23	Mare born 1831, Fam. 10 b. 8

No.	Name of the Stallions.	Born.	Age.	Produced the following progeny.
40	Catton	1809	20	Anne, Fam. 6. 14
			22	Mündig D
			24	Azalia, Fam. 42. 12
			24	Miss Bowe, Fam. 21. 12 (lived to 29 years of age)
41	Comus	1809	21	Birdlime, Fam. 2 f. 12
			21	Mare born 1831, Fam. 12. 13
			24	Mare born 1834, Fam. 2 a. 16
			24	Mare born 1834, Fam. 2 a. 15
			25	Grey Momus
			25	Shire Oaks, Fam. 6. 14
			25	Mare born 1835, Fam. 8 b. 17
			25	Mare born 1835, Fam. 17. 13
			26	Mare born 1836, Fam. 8 b. 17
			26	Mare born 1836, Fam. 5 b. 11
			26	Mare born 1836, Fam. 47. 7
42	Muley	1810	20	Muliana, Fam. 9 b. 14
			23	Rachel, Fam. 2 b. 17
			25	Mare born 1836, Fam. 8 b. 15
			26	Little Wonder D
			27	Mare born 1838, Fam. 19 a. 12
43	Tramp	1810	21	Fury, Fam. 4 e. 16
			21	Gipsy, Fam. 19. 13
			23	Game Lass, Fam. 42. 13
			24	Caroline Elvina, Fam. 2 f. 12
			24	Trudge, Fam. 6 a. 15
			24	Mare born 1835, Fam. 7 a. 10
44	Dr. Syntax	1811	21	Bee's Wing, Fam. 8 a. 16
			26	Bee's Wing, Fam. 1 d. 14
			26	Syntaxina, Fam. 5 c. 11
			26	Mare born 1838, Fam. 1 c. 13
			27	The Doctor
			27	Dorothy, Fam. 6 a. 15
45	Partisan	1811	21	Venison
			21	Gladiator
			21	Cyprian O, Fam. 23. 15
			22	Mare born 1834, Fam. 6. 14
			23	Constance, Fam. 22. 10
			23	Mare born 1835, Fam. 11 a. 14
46	American Eclipse	1814	21	Brawner's Eclipse
47	Pantaloon	1824	20	Mare born 1845, Fam. 14 a. 13
			21	Batwing, Fam. 14 a. 13
			21	Clarissa, Fam. 25. 12
			21	Caricature, Fam. 14 a. 13

No.	Name of the Stallions.	Born.	Age.	Produced the following progeny.
			21	Legerdemain, Fam. 3 a. 11
			21	Raillery, Fam. 14 a. 12
			22	Windhound
			22	Molly, Fam. 2 b. 17
			23	Aurora, Fam. 2 c. 17
			23	Agnes, Fam. 28. 14
			23	Miserrima, Fam. 3 a. 12
			24	Sabra, Fam. 3. 13
			26	Crystal, Fam. 2 f. 16
			26	Lady Audrey, Fam. 6 a. 15
48	Velocipede	1825	23	King of Trumps
49	Sir Hercules	1826	20	Subterfuge, Fam. 9 b. 14
			23	Ada, Fam. 1 c. 15
			27	Gunboat
			27	Gemma di Vergi
			27	Macaria, Fam. 4 a. 15
			28	Lifeboat
			28	Lady Langford, Fam. 2 f. 16
			28	Miss Hercules, Fam. 12 a. 20
50	Voltaire	1826	20	Voltigeur
			20	Sacrifice, Fam. 4 a. 16
			20	Mare born 1847, Fam. 34. 13
			21	Vivandiere, Fam. 2 e. 17
51	Touchstone	1831	20	Lord of the Isles
			20	De Clare
			20	Rifleman
			20	Bracelet, Fam. 4 e. 17
			21	Artillery
			21	Scalade, Fam. 20 a. 13
			21	Minie, Fam. 8 b. 16
			22	Tournament
			22	Lady Ann, Fam. 18. 15
			22	Lady Harriet, Fam. 4 e. 17
			22	Rosa Bonheur, Fam. 3 c. 14
			23	Bessie Bell, Fam. 4 e. 17
			23	Electra, Fam. 2 f. 14
			23	Oakleaf, Fam. 19 a. 14
			23	Sprightliness, Fam. 22. 13
			23	Terrific, Fam. 20 a. 13
			23	Tunstall Maid, Fam. 18. 15
			24	Griselda, Fam. 1 e. 15
			24	Miss Digby, Fam. 13 a. 17
			24	Prelude, Fam. 19. 15
			25	Wamba

No.	Name of the Stallions.	Born.	Age.	Produced the following progeny.
			25	Amethyst, Fam. 11. 15
			26	Atherstone
			26	Lady Macdonald, Fam. 4 e. 17
			26	Scrubbing Brush, Fam. 2 f. 16
			26	Tzaritza, Fam. 4 e. 18
			27	Marionette (2nd in D.)
			27	Silkstone, Fam. 5. 12
			27	Theresa, Fam. 4 e. 18
			28	Soapstone
			28	Alcestis, Fam. 4 a. 17
52	Birdcatcher	1833	20	Saunterer
			20	Ayacanora, Fam. 3 c. 14
			20	Beatrice, Fam. 1 b. 15
			20	Josephine, Fam. 4. 17
			20	Steel Pen, Fam. 2 b. 19
			20	Queen of the East, Fam. 12 b. 18
			20	Skycutter, Fam. 7 a. 12
			20	Mare born 1854, Fam. 5 b. 13
			21	Delight, Fam. 5 a. 12
			21	Perfection, Fam. 11. 15
			21	July, Fam. 28. 16
			22	Red Eagle Cm.
			23	Oxford
			23	Aminette, Fam. 3. 14
			23	Lady Trespass, Fam. 8 b. 20
			24	Folkestone (won 10 races as 2 year-old Clearw. St.)
			24	Cantatrice, Fam. 22. 12
			24	Tartlet, Fam. 21, 16
			25	Humming Bird, Fam. 3 c. 15
53	Gladiator	1833	21	Ventre St. Gris
54	Caravan	1834	24	Souvenir
55	Melbourne	1834	20	Mentmore
			20	The Peer
			20	Y. Melbourne
			20	Blanche of Middlebie, Fam. 3 a. 12
			20	Fascine, Fam. 20 a. 14
			20	Go-ahead, Fam. 7. 11
			20	Nelly, Fam. 18. 15
			20	Mare born 1855, Fam. 5 b. 13
			21	? Honey, Fam. 8 a. 18 (or by The Cossack)
56	Newcourt	1840	22	Cecrops
57	Orlando	1841	20	Chattanooga
			20	Fairyland, Fam. 3 d. 12

No.	Name of the Stallions.	Born.	Age.	Produced the following progeny.
			20	Kate Hampton, Fam. 10. 12
			20	Lay Sister, Fam. 20 a. 14
			20	Pulsatilla, Fam. 27. 17
			20	Venus, Fam. 2 e. 18
			21	Bessie, Fam. 1 b. 16
			21	Matilda, Fam. 22. 13
			21	Mrs. Stratton, Fam. 5. 14
			22	B. Flat (a twin), Fam. 10 b. 11
			22	F Sharp (a twin), Fam. 10 b. 11
			22	Nike, Fam. 3 c. 15
			24	Flower Girl, Fam. 11. 17
			24	Miss Evelyn, Fam. 20 a. 14
			24	Miss Foote, Fam. 19. 15
			25	Biretta, Fam. 5. 13
			26	Furiosa, Fam. 45. 9
			26	Gunga Jee, Fam. 5. 14
58	The Cure	1841	23	Polly Agnes, Fam. 16 a. 11
			24	Pharmacopeia, Fam. 27. 17
59	Weatherbit	1842	21	Brown Tommy
			21	Mandrake
			22	Agnes de Mansfeld, Fam. 16. 12
			22	Frolicsome, Fam. 24. 17
			22	La Belle Jeanne, Fam. 36. 11
			24	Miss Merryweather, Fam. 4 c. 20
60	Voltigeur	1847	22	Voltigeuse, Fam. 2. 21
			23	Sweet Violet, Fam. 21. 17
			24	Nelly Moore, Fam. 36. 13
			25	Incognita, Fam. 23. 18
			26	Tea Rose, Fam. 8 a. 20
61	Stockwell	1849	20	Doncaster D
			20	Gang Forward 2
			20	Cantiniere, Fam. 2 e. 19
			20	Corrie, Fam. 3 e. 14
			20	Wild Myrtle, Fam. 13. 21
			21	Lucebit
			21	Posthuma, Fam. 12 a. 21
			21	Stockdove, Fam. 2 c. 19
62	Rataplan	1850	20	Ben Battle
			20	Irma, Fam. 15. 15
			20	Isabel, Fam. 11 b. 15
63	King Tom	1851	20	? Coomassie, Fam. 10 b. 11 (or by North Lincoln)
			20	Princess, Fam. 11. 16
			20	Queen Margaret, Fam. 3 a. 13
			20	Mare born 1872, Fam. 15. 19

No.	Name of the Stallions.	Born.	Age.	Produced the following progeny.
			21	Coltness
			21	Great Tom
			21	Skylark
			21	Agnes Sorel, Fam. 16. 11
			21	Belle Agnes, Fam. 16. 12
			21	Queen of Cyprus, Fam. 23. 17
			22	Lady Golightly, Fam. 27. 19
			22	Nitocris, Fam. 20. 14
			22	Queen Marion, Fam. 10 a. 13
			22	Tribute, Fam. 2 a. 19
			23	Kingcup, Fam. 3 c. 16
			24	Blue Blood
			24	Discovery, Fam. 11. 16
			25	Italian Queen, Fam. 19. 16
			26	? Celandine, Fam. 1 e. 16 (or by Macaroni)
			26	? Miss Hannah, Fam. 10 b. 12 (or by Favonius)
64	Bonnie Scotland	1853	21	Bramble
65	Leamington	1853	21	Jaconet, Fam. 4 a. 20
			21	Perfection, Fam. 4 a. 20
			23	Sensation
			24	Iroquois D
			24	Spinaway, Fam. 11 b. 16
			24	Wyandotte, Fam. 4 a. 22
			25	Francesca (which had at 25 year-old Amos Fudd by Howland)
			25	Onondaga
66	Gunboat	1854	21	Torpedo
			23	Frigate, Fam. 20. 16
67	Saunterer	1854	22	Elegance, Fam. 12 b. 19
68	Toxophilite	1855	20	Bay Archer
			20	Lancastrian
			21	Belphöbe I., Fam. 13 a. 17
			22	Princess Mary II., Fam. 8 c. 20
			23	Lady Peregrine, Fam. 9 a. 18
			24	Dracena, Fam. 3 e. 15
			24	Lady Paramount, Fam. 10. 13
69	Buccaneer	1857	20	Balvany
			20	Vederemo
			23	Vinea
			24	Budagyongye N.D.
			25	Fenell O.D.U.
			25	Ollyan-nincs P.L.
			27	Talpra Magyar
			28	Kins-or
			29	Kincs

No.	Name of the Stallions.	Born.	Age.	Produced the following progeny.
70	Thunderbolt	1857	20	Meteora, Fam. 11 b. 17
			20	Select, Fam. 10. 14
			20	Mare born 1878, Fam. 19. 16
			21	Damages, Fam. 3 d. 13
			22	Dart, Fam. 3. 15
			23	6 (2 year-old winner in England)
			25	Thunderstorm
			26	Krakatoa
			27	Poudre à Canon, Fam. 3. 15
71	Adventurer	1859	20	Tabor, Fam. 13. 22
			21	Borneo
			21	Hirondelle, Fam. 10. 13
			21	Pinta, Fam. 2. 22
			21	Linda, Fam. 11. 17
			21	Planchette, Fam. 7. 13
			22	Black Agnes, Fam. 27. 19
			22	Wheatsheaf, Fam. 1 d. 17
72	Dollar	1860	22	Upas
			24	Brocage
			24	Dauphin
73	Blair Athol	1861	20	Child of the Mist
			20	Chiming Bells, Fam. 8 b. 19
			20	Chiquitta, Fam. 20. 15
			20	Glenrosa, Fam. 8 d. 19.
			20	Insignia, Fam. 9 b. 16
			21	Cyclopaedia, Fam. 10 b. 13
74	Norfolk	1861	24	Emperor of Norfolk
75	Savernake	1863	23	Bandit
			23	Nickel
76	Hermit	1864	20	Astrologer
			20	Friar Balsam
			20	Hazlehatch
			20	Bella Donna, Fam. 10 a. 12
			20	Devote, Fam. 4 a. 19
			20	Fleur de Marie, Fam. 8 c. 21
			20	Hermia, Fam. 19. 17
			20	Seraphine, Fam. 10 b. 13
			20	Sly, Fam. 11 a. 18
			21	Melanion
			21	Australia, Fam. 1 c. 19
			21	Seclusion, Fam. 2 c. 19
			21	Single Barrel, Fam. 9 e. 18
			21	Spoleta, Fam. 2. 20
			22	Heaume

No.	Name of the Stallions.	Born.	Age.	Produced the following progeny.
			22	Astrology, Fam. 9 a. 18
			22	Cushat, Fam. 2 c. 20
			22	Heresy, Fam. 10 a. 14
			22	La Cloche, Fam. 19. 17
			22	Lina Harket, Fam. 7. 16
			22	The Blythe, Fam. 4 b. 21
			22	St. Olave, Fam. 22 a. 14
			22	Mare born 1887, Fam. 8 c. 21
			23	Cinderelle, Fam. 2 d. 22
			23	Lady Hermione, Fam. 10. 14
			23	Silver Sea, Fam. 13 a. 18
			23	Star of Fortune, Fam. 9 a. 17
			24	Nun Nydia, Fam. 9 a. 19
			24	Priestess, Fam. 12 b. 21
			24	St. Cicely, Fam. 7. 16
			24	St. Odille, Fam. 4 b. 20
			25	? Minerva, Fam. 9 a. 19 (or by Galopin)
			26	Missal
			26	Corea, Fam. 3. 15
			26	Great Dame, Fam. 10. 14
77	Rosicrucian	1865	20	Abanico, Fam. 31. 16
			20	Bonnie Morn, Fam. 31. 16
			20	Doreuse, Fam. 1 b. 18
			20	Evanthe, Fam. 3 d. 14
			20	Kenegie, Fam. 5 b. 15
			20	Pythia, Fam. 4. 18
			20	Queen Berengaria, Fam. 4 d. 20
			20	Rose d'Amour, Fam. 20 a. 16
			21	Dalberg
			21	Rosa May, Fam. 2 d. 21
			21	Symbol, Fam. 14. 18
			22	Gay Duchess, Fam. 31. 16
			23	Rose Root, Fam. 2 c. 20
			25	Last Love, Fam. 2 c. 20
78	King Lud	1869	20	Boudoir
79	Ascetic	1871	25	Ascetic Silver
			26	Lord Abbot
80	Hampton	1872	20	Bay Ronald
			20	Hurry, Fam. 13. 19
			20	Lettice, Fam. 3 a. 14
			20	Capraria, Fam. 1 e. 19
			21	Happy Return, Fam. 14 a. 18
			23	Aboyne, Fam. 28. 18
			23	Helen Hampton, Fam. 16. 16

No.	Name of the Stallions.	Born.	Age.	Produced the following progeny.
81	Galopin	1872	23	Stub-Hampton, Fam. 10 b. 13
			23	Thames Valley, Fam. 4 b. 21
			23	Gadfly, Fam. 22. 16
			24	Inquisitive, Fam. 3 e. 17
			20	Galopin Lad
			20	Ganache
			20	Galeazzo
			20	Galata, Fam. 13 a. 19
			20	Pindi, Fam. 4 b. 20
			20	Flitters, Fam. 1 b. 17
			21	Grafton
			21	Guerrier
			21	Briseis, Fam. 2 d. 23
			21	Galatia, Fam. 13 a. 19
			21	Gelatine, Fam. 10 b. 13
			21	Goletta, Fam. 22 a. 16
			21	The Message, Fam. 20. 19
			21	Galopade II., Fam. 8 c. 22
			21	Miss Primrose, Fam. 1 b. 18
			22	Brio
			22	Disraeli
			22	Canter, Fam. 16 a. 13
			22	Dainty, Fam. 20 a. 16
			22	Galinthia, Fam. 7 a. 15
			23	Galopin Lassie, Fam. 14. 17
			23	Galandra, Fam. 20 a. 17
			24	Atbarra, Fam. 3 b. 18
			24	Merry Gal, Fam. 5. 16
			24	Nattie, Fam. 3. 16
			25	Aida, Fam. 9 a. 19
			25	Galicia, Fam. 10 a. 16
			26	? Alphabet, Fam. 14. 19 (or by Friar's Balsam)
82	Waisenknabe	1872	21	Bogdany
83	Kisber	1873	21	Sperbers Bruder
84	Springfield	1873	22	Cromlix, Fam. 11 b. 15
			20—25	(only 5 unimportant winners)
85	Chamant	1874	20	Habenichts
			20	Vollmond
			22	Pomp
			24	Letzter Mohikaner
86	Master Kildare	1875	23	Ostende Express

CHAPTER V.

A comparison of what Thoroughbreds have done previously and what they are doing at the present time.

The importance of a solid and lasting formation of legs in the breeding of Half-breds, and the confession of Thoroughbred breeders that an improvement of this fundament by the infusion of Thoroughbred is very seldom if at all possible, raises the question as to why in this respect, which is so important, the Thoroughbred may not be improved, or, in other words, how one can breed Thoroughbreds which are able to give the necessary stamina for the fundament. The answer to this question leads, first of all, to that well-known query, whether our present day Thoroughbred has not become worse during the last century, especially in respect to fundament.

We have not got enough exact and reliable statements of time of the races in former years, to compare them with the performances of to-day, and, therefore, cannot answer this question from records impartially. The records of Flying Childers at Newmarket over the Round Course and the Beacon Course were until now incorrectly said to be the best, and even unsurpassed records of Thoroughbreds on a racecourse. This erroneous opinion probably originated by a wrong division, which William Pick makes in his Turf Register, Vol. I., p. 12, where he reckons out the record of Flying Childers to be nearly a mile a minute, that is to say 82½ feet = about 25 metres, in a second, whereas from a correct calculation follows a record of only 15 metres in one second. Besides, even an exact and reliable measure of time would not be a safe guide as to the different capacity, because the distances for which horses were trained have changed so much, and formerly the tests nearly always took place in several heats. It is to be assumed that the present day Thoroughbred for a distance of 1 to 1½ English miles is quicker than the Thoroughbred of a hundred years ago. This alone, however, would not be a sufficient proof of the improvement of the Thoroughbred in general, especially as regards its adaptability to improve Half-breds, as we have no records to go through as to how quickly the former Thoroughbred could cover distances of 1 to 1½ English miles if

trained by the method in vogue to-day, which is without doubt an improved one, especially if it had been trained for races for that distance, and not for 4-mile heats.

Also, the measurements of time which we have for classic races for about the last fifty years, are insufficient to go on. Of the Derby and Oaks at Epsom we have the time from the year 1846. Of the Doncaster St. Leger from the year 1810. The tables given on the next page are characteristic.

As the measurement of time can only give a correct measurement of proven performances for races of steady motion (as I have already shown mathematically in 1899 in my treatise entitled, "Das Vollblutpferd in seiner Bedeutung fur die Halbblutzucht"), it is not at all surprising that the above measurements are an insufficient criterion for the capacity respecting the quality of horses. For example: according to these measurements, the very moderate Cicero would be a by far better horse than either Ormonde, Persimmon, Flying Fox, Ard Patrick; and of the Oaks winners, Cherry Lass better than La Fleche, Sceptre, and Pretty Polly, and the celebrated Wheel-of-Fortune would be the worst. The times given for the St. Leger would make us believe that Troutbeck was the best of all, and that Challacombe was as good as Pretty Polly, and much better than Ormonde, Galtee More, Persimmon, etc.

According to the Derby time, Ormonde ought to be worse than his predecessors, Melton and Kettledrum. Furthermore, Sir Tatton Sykes, born 1843, ought to be much better than Ormonde, Persimmon and Galtee More. As a matter of fact, from these measurements we can see that the Derby and Oaks times have become considerably shorter than those for the longer distance St. Leger. The reason probably is, that with the invasion of the American jockeys, the quicker getting off made more difference in the shorter races than in the longer St. Leger, or perhaps the speed of the present day Thoroughbred has not improved so much for longer distances as for shorter ones. Or, again, it is possible that the changing of the starts for the Derby and the Oaks, which took place in the year 1872, has effected an improvement of the time, as this alteration caused the first incline to be less difficult. Of course, one must not lose sight of the fact here that since 1872 the Derby distance has been lengthened by 23 metres, and the St. Leger distance (in 1826) has been shortened by 56 metres.

To draw a definite conclusion as to capability, even from the latest, reliable measurements of time seem to be out of question, especially when these measurements have to be compared with those of a hundred years ago.

Most measurements of olden times are given in Orton's Turf Annuals, especially for the York races. A great deal of these measurements has, unfortunately, been given for races in which insignificant horses ran. The following examples (from the earliest times to 1832) give the best record performances I have found:—

Times in the

Derby 2414 m—since 1872 2437 m		Min. Sec.	Oaks 2414 m—since 1872 2437 m		Min. Sec.	St. Leger 2993 m—since 1826 2937 m		Min. Sec.
1846	Pyrrhus I.	2 55	1846	Mendicant	2 53	1818	Reveller	3 15
1847	Cossak	2 52	1847	Miami	2 54	1819	Antonio	3 18
1848	Surplice	2 48	1848	Cymba	2 48	1834	Touchstone	3 22
1850	Voltigeur	2 50	1851	Iris	2 52	1835	Queen of Trumps	3 20
1851	Teddington	2 51	1853	Catherine Hayes	2 53	1836	Elis	3 20
1857	Blink Bonny	2 45	1861	Brown Duchess	2 44	1838	Don John	3 17
1861	Kettledrum	2 43	1864	Fille de l' Air	2 47	1846	Sir Tatton Sykes	3 16
1864	Blair Athol	2 43	1868	Formosa	2 $47\frac{1}{2}$	1852	Stockwell	3 21
1879	Sir Bevys	3 21	1879	Wheel of Fortune	3 02	1880	Robert the Devil	3 32
1885	Melton	2 $44\frac{1}{5}$	1885	Lonely	2 $43\frac{2}{5}$	1885	Melton	3 $15\frac{3}{5}$
1886	Ormonde	2 $45\frac{3}{5}$	1886	Miss Jummy	2 $54\frac{2}{5}$	1886	Ormonde	3 $21\frac{2}{5}$
1887	Merry Hampton	2 43	1887	Rêve d'Or	2 $50\frac{3}{5}$	1887	Kilwarlin	3 26
1888	Ayrshire	2 43	1888	Seabreeze	2 $42\frac{4}{5}$	1888	Seabreeze	3 $11\frac{4}{5}$
1889	Donovan	2 $44\frac{2}{5}$	1889	L'Abbesse de Jouarre	2 45	1889	Donovan	3 13
1890	Sainfoin	2 $49\frac{4}{5}$	1890	Memoir	2 $40\frac{4}{5}$	1890	Memoir	3 $13\frac{3}{5}$
1891	Common	2 $56\frac{4}{5}$	1891	Mimi	2 $54\frac{3}{5}$	1891	Common	3 $14\frac{2}{5}$
1892	Sir Hugo	2 44	1892	La Flèche	2 $43\frac{1}{5}$	1892	La Flèche	3 $14\frac{3}{5}$
1893	Isinglass	2 43	1893	Mrs. Butterwick	2 $44\frac{4}{5}$	1893	Isinglass	3 $13\frac{2}{5}$
1894	Ladas	2 $45\frac{4}{5}$	1894	Amiable	2 50	1894	Throstle	3 $12\frac{1}{5}$
1895	Sir Visto	2 $43\frac{2}{5}$	1895	La Sagesse	2 $48\frac{4}{5}$	1895	Sir Visto	3 $18\frac{2}{5}$
1896	Persimmon	2 42	1896	Canterbury Pilgrim	2 $45\frac{3}{5}$	1896	Persimmon	3 20
1897	Galtee More	2 44	1897	Limasol	2 45	1897	Galtee More	3 $31\frac{1}{5}$
1898	Jeddah	2 47	1898	Airs and Graces	2 $45\frac{4}{5}$	1898	Wildfowler	3 13
1899	Flying Fox	2 $42\frac{4}{5}$	1899	Musa	2 44	1899	Flying Fox	3 $15\frac{3}{5}$
1900	Diamond Jubilee	2 42	1900	La Roche	2 $45\frac{1}{5}$	1900	Diamond Jubilee	3 $09\frac{1}{5}$
1901	Volodyovski	2 $40\frac{4}{5}$	1901	Cap and Bells	2 $44\frac{2}{5}$	1901	Doricles	3 $08\frac{2}{5}$
1902	Ard Patrick	2 $42\frac{1}{5}$	1902	Sceptre	2 $46\frac{3}{5}$	1902	Sceptre	3 $12\frac{2}{5}$
1903	Rock Sand	2 $42\frac{4}{5}$	1903	Our Lassie	2 $44\frac{2}{5}$	1903	Rock Sand	3 $09\frac{2}{5}$
1904	St. Amant	2 $45\frac{2}{5}$	1904	Pretty Polly	2 $45\frac{1}{5}$	1904	Pretty Polly	3 $05\frac{4}{5}$
1905	Cicero	2 $39\frac{2}{5}$	1905	Cherry Lass	2 38	1905	Challacombe	3 $05\frac{2}{5}$
1906	Spearmint	2 $36\frac{4}{5}$	1906	Keystone II.	2 $38\frac{3}{5}$	1906	Troutbeck	3 $04\frac{1}{5}$
1907	Orby	2 44	1907	Glass Doll	2 42	1907	Wool Winder	3 $05\frac{3}{5}$

1. Distance 4 miles = 6437.2 m.

		Min.	Sec.
1759.	Cade 5 year-old by Cade, 9 stone	8	5
1759.	Silvio 5 year-old by Cade, 10 stone	8	7
1759.	Careless 9 year-old by Regulus, 9 stone	8	8
1764.	Beaufrement 6 year-old by Tartar, 8 stone, 7 lbs.	7	51
1766.	Bay Malton 6 year-old by Sampson, 9 stone	7	43½
1793.	Huby 5 year-old by Phoenomenon, 8 stone, 7 lbs.	7	30½
1801.[1]	Sir Solomon 5 year-old by Sir Peter, 8 stone, 7 lbs.	7	10½
1802.[1]	Alonzo 4 year-old by Pegasus, 8 stone, 7 lbs.	7	8
1803.	Haphazard 6 year-old by Sir Peter, 8 stone, 10 lbs.	7	32
1805.	Saxoni 5 year-old by Delpini, 8 stone, 4 lbs.	7	28
1809.	Petronius 4 year-old by Sir Peter, 7 stone, 9 lbs.	7	25
1810.	Theresa 5 year-old by Hambletonian, 8 stone, 5 lbs.	7	30

2. Distance 2 miles = 3218.6 m.

		Min.	Sec.
1804.	Witchcraft 3 year-old by Sir Peter, 8 stone, 2 lbs.	3	40
1815.	Catton 6 year-old by Golumpus, 8 stone, 2 lbs.	3	33
1824.	Fair Charlotte 6 year-old by Catton, 8 stone, 10 lbs.	3	28
1827.	Mulatto 4 year-old by Catton, 8 stone, 3 lbs.	3	34
1829.	Velocipede 4 year-old by Blacklock, 7 stone, 12 lbs.	3	33
1830.	Fortitude 4 year-old by Whisker, 7 stone, 8 lbs.	3	29

3. Distance 1¾ miles = 2816.3 m.

		Min.	Sec.
1809.	Sheba's Queen 3 year-old by Sir Solomon, 8 stone	3	20
1824.	Sandbeck 6 year-old by Catton, 8 stone, 3 lbs.	3	13
1826.	M'Adam 3 year-old by Tramp, 8 stone, 5 lbs.	3	17
1826.	Belzoni 3 year-old by Blacklock, 8 stone, 5 lbs.	3	21
1827.	Medoro 3 year-old by Cervantes, 8 stone, 5 lbs.	3	12
1827.	Maleck 3 year-old by Blacklock, 8 stone, 5 lbs.	3	17
1828.	Velocipede 3 year-old by Blacklock, 8 stone, 5 lbs.	3	20
1829.	Sir Hercules 3 year-old by Whalebone, 8 stone, 5 lbs.	3	15
1830.	Chancellor 3 year-old by Catton, 8 stone, 5 lbs.	3	18

4. Distance 1½ miles = 2414 m.

		Min.	Sec.
1804.	Quid 3 year-old by Star, 8 stone	2	54
1804.	Lady Brough 3 year-old by Stride, 8 stone	2	47
1824.	Abron 4 year-old by Whisker, 8 stone, 6 lbs.	2	51
1826.	Helenus 5 year-old by Soothsayer, 9 stone, 6 lbs.	2	49
1827.	Mauto 3 year-old by Tiresias, 8 stone, 3 lbs.	2	50
1832.	Retainer 3 year-old by Jerry, 8 stone, 7 lbs.	2	47

[1] These two races were run at Doncaster, all the others at York.

5. Distance $1\frac{1}{4}$ miles = 2011.6 m.

		Min.	Sec.
1828.	Laurel 4 year-old by Blacklock, 8 stone	2	15
1832.	Mare 3 year-old by Figaro, 8 stone, 2 lbs.	2	12

6. Distance 1 mile = 1609.3 m.

		Min.	Sec.
1811.	Bethlem Gaber 3 year-old by Sorcerer, 8 stone, 2 lbs. . .	1	40
1826.	Brother to Miss Fanny 3 year-old by Walton, 8 stone, 6 lbs.	1	43
1827.	Tom Jones 3 year-old by Abjer, 8 stone, 5 lbs.	1	47
1829.	Voltaire 3 year-old by Blacklock, 8 stone, 5 lbs.	1	49

7. Distance Redhouse at (Doncaster) = 5 furlongs, 152 yards = 1145 m.

		Min.	Sec.
1826.	Moonshine 2 year-old by Grey Middleham, 8 stone, 5 lbs.	1	12

8. Distance T. Y. C. = 5 furlongs, 44 yards = 1046.2 m.

		Min.	Sec.
1808.	Middlethorpe 2 year-old by Shuttle, 8 stone, 2 lbs. . . .	1	20
1824.	Androgeus 2 year-old by Minos, 8 stone, 5 lbs.	1	15
1827.	Velocipede 2 year-old by Blacklock, 8 stone, 5 lbs. . . .	1	9
1827.	Slut 2 year-old by Tramp, 7 stone, 11 lbs.	1	14
1828.	Mare 2 year-old by Jack Spigot, 8 stone, 2 lbs.	1	14
1830.	Chorister 2 year-old by Lottery, 8 stone, 5 lbs.	1	8
1830.	Clarence 2 year-old by Comus, 8 stone, 5 lbs.	1	11

Besides the above, the following interesting performances are well known :—

1. Distance 6120 m. at Newmarket, Round Course = 3 miles, 6 furlongs, 93 yards.

		Min.	Sec.
1721.[1]	Flying Childers 6 year-old, 9 stone, 2 lbs.	6	48

2. Distance 6764.6 m. at Newmarket, B. C. = 4 miles, 1 furlong, 138 yards.

		Min.	Sec.
1721.[2]	Flying Childers, 6 year-old	7	30
1755.[3]	Matchem 7 year-old, 8 stone, 7 lbs.	7	20
1792.[4]	Hambletonian 7 year-old, 8 stone, 3 lbs.	7	15
	At Eclipse's time several horses	8	—

3. Distance 1610 m. at Newmarket, R. M. = 1 mile, 1 yard.

		Min.	Sec.
1773.[5]	Firetail 4 year-old by Squirrel, 8 stone	1	$4\frac{1}{2}$

[1] Sporting Calendar by J. Pond, Vol. I., 1751, p. 213.

[2] Turf Register by Pick, Vol. I., p. 12.

[3] Turf Register by Pick, Vol. I., p. 136.

[4] Raciana by Muir, p. 162.

[5] Racing Calendar 1773, p. 14; Turf Register by Pick, Vol. II., p. 327; Morning Post and Daily Advertiser, 19th April, 1773; and Sporting Magazine, Vol. IV., p. 325.

The time measurement in the race of Firetail at Newmarket over a mile shows a record performance of almost 25 m. in the second, and appears to me to be incorrect. Possibly a printer's error crept in the " Morning Post," and the others took the report from the newspaper. The remaining time measurements show the following maximum performances :—

Distance Meter.	Year.	Place.	Name of Horse.	Age Year.	Weight. st. lbs.	Meter in 1 Second.
6764,6	1792	Newmarket	Hambletonian	7	8 3	15,55
6137,2	1802	Doncaster	Alonzo	4	8 7	15,04
6120	1721	Newmarket	Flying Childers	6	9 2	15,00
3218,6	1824	York	Fair Charlotte	5	8 10	15,41
2993	1818	Doncaster St. Leg.	Reveller	3	8 2	15,35
2816,3	1827	York	Medoro	3	8 5	14,67
2414	1804	York	Lady Brough	3	8 0	14,45
2011,6	1832	York	Mare by Figaro	3	8 2	15,24
1609,3	1811	York	Bethlem Gaber	3	8 2	16,09
1145	1826	Doncaster	Moonshine	2	8 5	15,90
1046,2	1830	York	Chorister	2	8 5	15,38

The best known record performances in England during the last twenty-years are as follows :—

Distance Meter.	Year.	Place.	Name of Horse.	Age Year.	Weight. st. lbs.	Meter in 1 Second.
4224,6	1880	Doncaster. Cup.	Dresden China	4	9 —	17,24
3646,6	1881	Newmarket. Ces.	Foxhall	3	7 12	15,12
3646,6	1880	Newmarket. Ces.	Robert the Devil	3	8 6	14,05
2937	1904	Doncaster. St. Leg.	Pretty Polly	3	8 11	15,88[1]
2414	1905	Epsom. Derby	Cicero	3	9 —	15,18[2]
2414	1905	Epsom. Oaks	Cherry Lass	3	9 —	15,28[3]
1609,3	1885	Lincoln. Hdcp.	Bendigo	5	8 5	16,62
1407,4	1882	Manchester. Hdcp.	Toastmaster	5	9 6	17,28
1206,9	1882	Epsom. Woodc. St.	Beau Brummel	2	8 12	15,91
1006	1882	Manchester	Chislehurst	2	8 10	15,16

The proportionately little differences in time in the classic races show that these times are the most reliable, and, therefore, the most suitable for

[1] Best time in the St. Leger.
[2] Best time in the Derby.
[3] Best time in the Oaks.

making comparisons. A little more than 15 metres to the second seems to be about the distance which the better kind of racehorses of former, as well as of the present time can do. Just about the middle of this period lived the celebrated West Australian, born 1850, winner of the Derby, St. Leger, and 2,000 Guineas. Also its record for the St. Leger was 15.41 metres, for the Ascot Gold Cup (distance 3,982 metres) 15.11 metres. In the Ascot Gold Cup of 1863, Buckstone's record, as a four-year-old, with 8 stone, 7 lbs., after a dead heat, was 16.10 metres, and in the year 1897, Persimmon's record, as a four-year-old, 9 stone, was 14.08 metres.

The compilation of the best records of ancient and modern times, after taking into consideration all accessories, show therefore, neither a progress nor a retrogression in the capability of the Thoroughbred. Only within the last few years the American method of riding, with its quick getting off, and its quick pace all along, seems to have affected a little the shortening of the time, and to prevent greater differences of time as happened previously.

However, the English race calendars show that there exists a marked difference in the endurance of older horses. The difficulties of training racehorses, and especially the difficulty of bringing so-called first-class racehorses after their fourth or fifth year again on the track, are well known, and are caused by the insufficient resisting capacity of the fundament of the present day Thoroughbred.

Every sportsman will acknowledge this regrettable fact, *i.e.*, that the galloping capability of the present day Thoroughbred has been more developed than the less developed fundament can stand.

In order to get an actual basis to compare the performances of older Thoroughbreds of former times with those of the present time on the flat, I have compiled, in the following tables, beginning with the most ancient times up to the time of the celebrated Fisherman (therefore about the middle of the last century), the most prominent performances of older horses on the flat. As a rule, I have only taken such horses that have won flat races as eight-year-olds and above that age. Gentlemen's flat races are not mentioned, but the more celebrated steeple-chasers I have noted. I have compiled on the basis of the male ascent. Of the figures given under each horse, the one on the left shows the age at which the horse first started racing, and the one on the right shows the age at which it won last on the flat. Sires of horses which have won races at a great age have also their own performances mentioned in the same manner as a comparison.

To judge of the influence of the early and frequent two-year-old races, I have given, with the sires as well as with the dams of the respective racehorses, in which month they first ran as two-year-olds, and how often altogether as two-year-olds. Where the dam did not run at all as a two-year-old I have not mentioned her at all.

The Provost 1836 by the Saddler
2 (May 3 times)—6.
Alp 1846 by The Provost
3—8 Dam 2 y. August twice.

means, The Provost ran as a two-year-old first in May, and altogether as a two-year-old three times, and won at last as a six-year-old. Alp ran first as a three-year-old. Its last win was as an eight-year-old. Its dam ran first as a two-year-old in August, and altogether twice as a two-year-old.

Darley's Arabian born 1702.

1. **BRISK** 1711 by Darley's Arabian.
5. (Half-brother to Coneyskins.)
Foxhunter (Cole's) 1727 by Brisk.
6—9.
MOSES 1746 by Foxhunter (Cole's).
4.
Otho 1760 by Moses.
4—7.
1. *COXCOMB* 1771 by Otho.
3—4, then up to 18 year-old used as a hunter, at 17 year-old won a Match over 2 miles with heats at St. Ives.
Blackcock 1782 by Coxcomb.
3—8.

2. **ALEPPO** 1711 by Darley's Arabian.
5.
Hobgoblin 1724 by Aleppo.
5—9.
SHAKESPEARE 1745 by Hobgoblin.
4—8.
Pincher 1765 by Shakespeare.
4—9. (Half-Brother to King Fergus).

3. **FLYING CHILDERS** 1715 by Darley's Arabian.
6—8.
1. **Second** 1732 by Flying Childers.
5—11.
2. **Blaze** 1733 by Flying Childers.
5—7 (up to 10 year-old without winning).
1. **SAMPSON** 1745 by Blaze.
5—7.
1. **Engineer** 1755 by Sampson.
5—10.
MAMBRINO 1768 by Engineer (s. to America).
5—8 (up to 11 year-old without winning).
2. **Bay Malton** 1760 by Sampson.
4—8.
3. **Pilgrim** 1762 by Sampson.
4—12.

4. **Solon** 1766 by Sampson.
4—10.
2. **SCRUB** 1751 by Blaze.
4—10.
Changeling 1767 by Scrub.
4—10.
3. **Snip** 1736 by Flying Childers.
5.
SNAP 1750 by Snip.
6—7.
1. **Lathom's Snap** 1759 by Snap.
4—8.
STARTING TOM 1772 by Lathom's Snap.
4—10.
2. **Metaphysician** 1763 by Snap.
4—8.
3. **Goldfinder** 1764 by Snap.
4—6.
1. *KNIGHT ERRANT* 1774 by Goldfinder.
5—8.
2. *DOCTOR* 1776 by Goldfinder.
3—9.
4. **Prize** 1767 by Snap.
5—9.
5. **Mexican** 1775 by Snap (s. to Virginia).
3—8.

4. **BARTLET'S** (or Bleeding) Childers about 1716 by Darley's Arabian.
(Not run).
1. **Squirt** 1732 by Bartlet's Childers.
5—8 (up to 11 year-old without winning, also in Give and Take Pl.).
1. **SYPHON** 1750 by Squirt.
4.
1. **Sweet William** 1768 by Syphon.
4—8.
2. **Sweetbriar** 1769 by Syphon.
4—6.
1. *CHOCOLATE* 1777 by Sweetbriar.
3—5.
Jerry Sneak 1796 by Chocolate out of 25 year-old Mother
2 (October, once)—13. [Brown. 4—11.]
1. Fitzjerry 1807 by Jerry Sneak.
2—9.
2. Hollymount 1812 by Jerry Sneak.
4—10.
2. *EXCISEMAN* 1781 by Sweetbriar.
8—12.
2. **MARSKE** 1750 by Squirt.
4 (5 and 6 year-old without winning).
1. **Eclipse** 1764 by Marske.
5—6.

1. *JAVELIN* 1772 by Eclipse.
4.
1. *Chance* 1780 by Javelin (s. to Russia).
4—8.
2. *Helmet* 1788 by Javelin.
3—10.
3. *Y. Javelin* (later Antrim) 1795 by Javelin.
2—8.
2. *POT8OS* 1773 by Eclipse.
4—10.
1. *Coriander* 1786 by Pot8os.
3—8.
Marcia 1797 by Coriander.
3—9.
2. *Telescope* 1786 by Pot8os.
3—8.
3. *Alderman* 1787 by Pot8os (s. to Virginia).
3—9.
4. *Druid* 1790 by Pot8os.
3—8.
5. *Waxy* 1790 by Pot8os.
3—6. D.
1. Waxy Pope 1806 by Waxy.
3—6. D.
1. Noble 1816 by Waxy Pope.
5—9.
2. Gossoon 1818 by Waxy Pope.
4—9 (Half-bred).
3. Starch 1819 by Waxy Pope.
3—8.
Confusion 1832 by Starch.
7—10.
4. Skylark 1826 by Waxy Pope (1836 s. to America).
3—8.
St. Lawrence 1837 by Skylark (or Lapwing).
2—10.
(10 year-old Chester Cup).
2. Whalebone 1807 by Waxy.
3—6. D.
1. Waverley 1817 by Whalebone.
3—5.
1. The Saddler 1828 by Waverley.
2 (Sept., twice)—6. Dep.
1. The Provost 1836 by The [Saddler.
2 (May, 3 times)—6.
Alp 1846 by The Provost.
3—8. Dam 2 y. Aug., twice.
2. Shadow 1836 by The Saddler.
2—11. Dam 2 y. April once.
3. Inheritress 1840 by The Saddler.
2—10.

4. Radulphus 1843 by The Saddler.
2—14.
5. Sir Peter Laurie 1873 by The Saddler.
3. A famous steepler.
(1852 3rd in Liverpool Grand National.)
Hall Court 1859 by Sir Peter Laurie. A famous steepler. 1865 and 1869 2nd in Liverpool Grand National.
6. Vesta 1843 by The Saddler.
2—9.
2. The Bard 1833 by Waverley (s. to Russia).
2 (June, twice)—4. (Own brother to The Saddler).
Miss Burns 1840 by The Bard.
5—9.
3. Sambo Sutton 1834 by Waverley.
6—10. Dam 2 y. April, once.
2. Camel 1822 by Whalebone.
3—5.
1. Abbas Mirza 1831 by Camel.
3.
The Widow 1839 by Abbas Mirza.
7—9 (10 year-old without winning, 8 year-old Cm.)
2. Touchstone 1831 by Camel.
2 (Sept., twice)—6 L. Acp. 2 × Dcp. 2 ×
1. Cotherstone 1840 by Touchstone.
2 (Oct., twice)—3. D. 2.
Bordeaux 1847 by Cotherstone.
2—9. Dam 2 y. Sept., once.
2. Orlando 1841 by Touchstone.
2 (Juni, 5 times)—5. D.
1. Octavia 1849 by Orlando.
3—8.
2. Fractious 1853 by Orlando.
2—8.
3. Ithuriel 1841 by Touchstone.
3.
Sir Rowland Trenchard 1848 by Ithuriel.
2—8.
3. Sir Isaac 1831 by Camel.
(Not run).
Yardley 1840 by Sir Isaac.
3—8. Dam 2 y. July, twice.
4. Caravan 1834 by Camel.
3—7. (2nd D.) Acp.
5. Camelino 1836 by Camel.
2—8. Dam 2 y. July, twice.
6. Queen of the Gipsies 1840 by Camel.
2—9. Dam 2 y. June, once.
3. Busk 1824 by Whalebone.
2—8.

4. Sir Hercules 1826 by Whalebone.
2 (Oct., once and 1 w. o.) —4. (Sire of many good steeplechasers).
1. Birdcatcher 1833 by Sir Hercules.
2 (Oct., once) —4.
1. The Baron 1842 by Birdcatcher.
3. L. Cs.
Zouave 1855 by The Baron.
3.
The Lamb 1862 by Zouave.
A famous steepler.
1868 and 1870 winner in Liverp. Gr. Nation.
2. Kingfisher 1842 by Birdcatcher.
6—8.
3. Blarney 1847 (or 48) by Birdcatcher.
7—12.
4. Knight of St. George 1851 by Birdcatcher.
2 (Sept., 4 times) —3. L.
Dan O'Connell 1858 by Knight of St. [George.
(Not run).
The Liberator 1869 by Dan [O'Connell.
3—5. 6—15 y. steeplechase.
1879 winner in Liverpool Grand National. Ran as 17 year-old in Liverpool Grand National.
(Dam 2 y. Sept., twice).
2. Magnum Bonum (later Discount) 1838 by Sir [Hercules.
4. Famous steepler.
1844 winner in Liverpool Grand National.
5. Merman 1826 by Whalebone.
3—9.
6. The Sea 1830 by Whalebone.
3. Later in Steeplechases.
1848 also in Liverpool Grand National.
Freetrader 1849 by The Sea.
2—5.
1856 winner in Liverpool Grand National.
7. Bodice 1831 by Whalebone.
3—8.
3. Whisker 1812 by Waxy.
3—6. D.
1. Memnon 1822 by Whisker (s. to Russia).
2 (Sept., twice) —5. L.
1. Seventy-four 1833 by Memnon.
3. A famous steepler, twice 2nd Liverpool Grand National.
2. King Cole 1833 by Memnon.
2—9.

2. Catterick 1822 by Whisker.
3.
1. Jerry about 1830 by Catterick.
A famous steepler. (Half-bred).
1840 winner in Liverpool Grand National.
2. Roderick Random about 1832 by Catterick.
A famous steepler. (Half-bred).
3. Catherina 1830 by Whisker.
2—11.
6. *Doricles* 1790 by PotSos.
4—8.
7. *Oliver* 1791 by PotSos.
3—8. Dam 2 y. July, 3 times.
8. *Thereabouts* 1792 by PotSos.
4—9.
9. *Trifle* 1795 by PotSos.
2—8.
10. *Parasol* 1800 by PotSos.
3—8.
3. *SATELLITE* 1774 by Eclipse.
3—6 (up to 9 year-old without winning).
Keren-Happuch 1789 by Satellite.
3—8. (Half-sister to Waxy).
4. *JUPITER* 1774 by Eclipse.
3—4. (Own brother to Volunteer and Mercury).
1. *Cardock* 1785 by Jupiter.
2—9.
2. *Halkin* 1786 by Jupiter.
3—8.
4. *KING FERGUS* 1775 by Eclipse.
3—6.
1. *Beningbrough* 1791 by King Fergus.
3—6. L.
1. O r v i l l e 1799 by Beningbrough.
2 (August, twice) —8. L.
1. Muley 1810 by Orville.
5.
1. Morisco 1819 by Muley.
3—5.
Taurus 1826 by Morisco (or Phantom)
(1839 s. to Germany).
3 (and up to 7 year-old without winning).
1. John o'Gaunt 1838 by Taurus.
3—7.
Hungerford 1848 by John o'Gaunt.
2—8. Dam 2 year-old, June, once.
2. Oakley 1838 by Taurus.
3—7.
2. Atlas 1826 by Muley.
4—9.

3. Muley Moloch 1830 by Muley.
2 (May, twice) —5.
1. Alice Hawthorn 1838 by Muley Moloch.
3—7. Gcp. Dcp. 2 ×. Mother, Grand mother, and Great-grandmother not run.
2. Morpeth 1841 by Muley Moloch.
2—8.
4. Dulcimer 1836 by Muley.
3.
Dulcet 1842 by Dulcimer.
3—10.
2. Fitz Orville 1812 by Orville.
3—6.
Gondolier 1826 by Fitz Orville.
3—8.
3. Master Henry 1815 by Orville.
2—7 (7 year-old, 6 races, won).
Dam 2 y. July, twice.
4. Andrew 1816 by Orville.
3—4.
Cadland 1825 by Andrew.
3—6. D. 2.
Miss Kitty Cockle 1834 by Cadland.
4—9. Dam 2 y. Sept., once.
5. Bizarre 1820 by Orville.
5—6.
1. Nike 1830 by Bizarre.
3—8.
2. Mus 1833 by Bizarre.
3—8.
3. Bellissima 1835 by Bizarre.
3—9.
6. Emilius 1820 by Orville.
3—4. D.
1. St. Nicholas 1827 by Emilius
2 (Sept., twice) —3. (1840 s. to Germany).
1. St. Lawrence 1833 by St. Nicholas.
2 (Aug., twice.)
Grillade 1852 by St. Lawrence.
4—9.
2. California 1833 by St. Nicholas.
(Not run).
Romeo 1850 by California.
2—10. 12 y. 3rd in Liverp. Gr. Nat.
2. Priam 1827 by Emilius.
3—5. D. Gcp. 2 ×.
1. Y. Priam (later Wild Hero) 1836 by Priam.
2 (Oct., 3 times.)
Tom Tough 1840 by Y. Priam.
3—8. (Half-bred).

2. Zoroaster 1836 by Priam.
2—8. Dam 2 y. June, twice.
2. S c u d 1804 by Beningbrough.
3—4.
Actäon 1822 by Scud.
3—6.
Aimwell 1835 by Actäon.
2—9. Dam 2 y. April, once.
2. *Hambletonian* 1792 by King Fergus.
3—8. L.
1. W h i t e l o c k 1803 by Hambletonian.
4.
Blacklock 1814 by Whitelock.
2 (Aug., 3 times) —5.
1. Brutandorf 1821 by Blacklock.
3—6.
1. Hetman Platoff 1826 by Brutandorf.
3—4.
1. The Cossack 1844 by Hetman Platoff.
2 (July, once) —3. D. (up to 8 year-old without winning, but very good).
Alcibiade 1860 by The Cossack.
3. 1865 winner in Liverp. Gr. Nat.
2. Timotheus 1848 by Hetman Platoff.
2—9. Dam 2 y. June, once.
2. Physician 1829 by Brutandorf.
2 (Oct., once) —5.
Aristotle 1839 by Physician.
3—8.
3. Arctic 1833 by Brutandorf.
4—10. (Half-bred.)
4. Gay Lad about 1833 by Brutandorf.
A famous steepler (Half-bred).
1842 winner in Liverpool Grand National.
2. Brownlock 1822 by Blacklock.
3—9.
3. Velocipede 1825 by Blacklock.
2 (April, 4 times) —4.
1. Valentissimo 1832 by Velocipede.
2—8.
2. Hornsea 1832 by Velocipede.
3—4. Gep.
Cataract 1840 by Hornsea.
3—5.
Waterfall 1848 by Cataract.
?—8.
3. Maid of Team Valley 1846 by Velocipede.
2—9. Dam 2 y. April, once.
4. Y. Blacklock 1825 by Blacklock.
3.

Magpie 1834 by Y. Blacklock.
2 (Sept., 3 times, and 1 w.o.) —5.
Lough Bawn 1848 by Magpie.
3—10.
5. Tranby 1826 by Blacklock (s. to America).
4—6 (ran as a 5 year-old in the famous bet of Mr. Osbaldeston).
I-am-not-aware 1835 by Tranby.
2—9. Dam 2 y. June, 6 times.
6. Flacrow 1826 by Blacklock.
3. Famous steepler.
7. Voltaire 1826 by Blacklock.
2 (April, twice) —3.
Charles XII. 1836 by Voltaire.
3—7. L.
Little Charley 1848 by Charles XII.
A famous steepler.
1858 winner in Liverp. Gr. Nat.
2. Camillus 1803 by Hambletonian and Faith.
3. 3—7.
1. Oiseau 1809 by Camillus.
2 (April, 5 times) —7.
Revolution 1827 by Oiseau.
3—8.
2. Magistrate 1814 by Camillus (s. to Russia).
3—5. (Half-brother to Fleur de Lis.)
1. Coroner 1825 by Magistrate.
3—9.
2. Terror 1825 by Magistrate.
3—9.
3. Garus 1812 by Hambletonian.
3—9.
4. Anticipation 1812 by Hambletonian.
3—7. Dam 2 y. May, once. (Half-brother to Clinker).
Presentiment 1821 by Anticipation.
2—8.
3. *Hippona* 1794 by King Fergus.
4—8.
4. *Warter* 1794 by King Fergus.
3—8.
5. *Queensberry* (later Picadilly) 1794 by King Fergus.
5.
Katty Flanaghan 1792 by Queensberry.
4—9.
6. *TIFFANY* 1775 by Eclipse.
4—8.
7. *FLAMER* 1776 by Eclipse.
5—9.
8. *MERCURY* 1778 by Eclipse.
3—6. (Own brother to Jupiter and Volunteer).

1. *Old Gold* 1787 by Mercury.
   3—8.
2. *Precipitate* 1787 by Mercury (1803 s. to Virginia).
   3—5. (Own brother to Gohanna).
   1. B o b t a i l 1795 by Precipitate.
      3—10. Dam 2 y. July, 4 times.
   2. M a t r a n n e e 1795 by Precipitate.
      3—8.
   3. R o l l a 1797 by Precipitate.
      2—8.
   4. L a n g t o n 1802 by Precipitate.
      3—10.
3. *Gohanna* 1790 by Mercury.
   3—10. (Own brother to Precipitate).
   1. G o l u m p u s 1802 by Gohanna.
      (Not run).
      Catton 1809 by Golumpus.
      3—8.
      1. Mulatto 1823 by Catton.
         3—6. Dep.
         1. Discord 1837 by Mulatto.
            5—8. Dam 2 y. June, twice.
         2. African 1839 by Mulatto.
            3—8.
      2. Coronet 1825 by Catton (1837 s. to Virginia).
         3—11. Dam 2 y. May, twice.
      3. Cistercian 1826 by Catton.
         3—10. (Own brother to The Nun).
      4. The Poet 1826 by Catton.
         A famous steepler.
      5. The Chancellor 1827 by Catton.
         3—8.
      6. Diana 1828 by Catton.
         2—8.
      7. The Nun 1829 by Catton.
         7—9. Later a famous steepler up to 11 year-old. Twice Leam. St. Ch. won.
      8. David 1829 by Catton.
         3—5. (Half-brother to Despot).
         Crabbs 1844 by David.
         3—9.
   2. C e r b e r u s 1802 by Gohanna (s. to Russia).
      3—9. (Sire of many good racers).
   3. E l e c t i o n 1804 by Gohanna.
      3—7. D. Dam 2 y. June, 4 times.
      1. Leah 1814 by Election.
         3—9.
      2. Manfred 1814 by Election.
         3—5.
         Bilberry 1826 by Manfred or by Hedley (by Gohanna).
         4—9.

4. Z u l e i k a 1810 by Gohanna.
4—8. (Dam of Helenus).
4. *Brigadier* 1792 by Mercury.
4—10.
5. *Shaver* (earlier Little Wirley) 1792 by Mercury.
6—10.
9. *JOE ANDREWS* (earlier Dennis O!) 1778 by Eclipse
4—9.
Dick Andrews 1797 by Joe Andrews.
3—6.
1. C w r w 1809 by Dick Andrews.
3—7. 2.
2. T r a m p 1810 by Dick Andrews.
3—4.
1. Lottery (earlier Tinker) 1820 by Tramp (1833 s. to
3—6. Dep. [France).
(A large progeny by Lottery winning up to 7 year-old, half-brother to Altisidora and Brutandorf).
1. Lottery 1829 by Lottery.
5—16. Steepler. (Not in the Stud Book, but ought to be a Thoroughbred).
1839. Winner in Lvp. Gr. Nation.
2. Zohrab 1831 by Lottery.
3—10.
3. Sheet Anchor 1832 by Lottery
3—4. (s. to Germany).
1. Collingwood 1843 by Sheet Anchor.
2—7.
2. Weatherbit 1842 by Sheet Anchor.
3—4.
Weathercock 1851 by Weatherbit.
A famous steepler. 1857 and 1858 2nd in Liverpool Grand National.
2. Little Red Rover 1827 by Tramp.
3—7.
3. Traveller 1828 by Tramp.
2—9.
4. Vagrant 1828 by Tramp.
3—10.
5. Liverpool 1828 by Tramp.
2 (Sept., once) —5.
1. Lanercost 1835 by Liverpool.
3—7. Cm. Dam 2 y. Oct., once.
Van Tromp 1844 by Lanercost (s. to Russia).
2 (July, 3 times and 1 w. o.) —5. L. Gcp.
Prince of Orange 1853 by Van Tromp.
2—8.
2. Naworth 1837 by Liverpool.
2—9.

3. A British Yeoman 1840 by Liverpool.
2. (May, 6 times).
Bourgeois 1850 by A British Yeoman.
3—11.
4. Birkenhead 1843 by Liverpool.
(Not run).
New Brighton 1850 by Birkenhead.
4—10.

10. *SALTRAM* 1780 by Eclipse (1793 s. to Russia).
3—5. D.
Whiskey 1789 by Saltram.
3—4.
1. Eleanor 1798 by Whiskey.
3—7. D. O. (Half-sister to Sorcerer and dam of Muley).
2. Whirligig 1798 by Whiskey.
4—8.
3. Rumbo 1800 by Whiskey.
2—11.
4. Spy 1803 by Whiskey.
3—10. Dam 2 y. July, 4 times.

11. *VOLUNTEER* (later Cornet) 1780 by Eclipse.
3—5. (Own brother to Mercury and Jupiter).
1. *Magic* 1794 by Volunteer.
4—5.
Mountaineer 1802 by Magic.
3—11.
2. *Eagle* 1796 by Volunteer (s. to Virginia).
3—9. (Own brother to Spread Eagle D., half-brother to Didelot D.)
Asmodeus 1807 by Eagle.
3—9.

12. *ERASMUS* 1781 by Eclipse.
3. (Own brother to Alexander and Don Quixote).
Esher 1795 by Erasmus.
6—8. (Half-brother to Pegasus).

13. *ALEXANDER* 1782 by Eclipse.
3—7. (Own brother to Erasmus and Don Quixote).
Bucephalus 1802 by Alexander (s. to Russia).
3—8.

14. *METEOR* 1783 by Eclipse.
3—7.
1. *Meteora* 1802 by Meteor.
3—8. O. Dam 2 y July, twice.
2. *Ambo* 1809 by Meteor (or by Diamond).
2 (Oct., once) —6.
Liston 1821 by Ambo.
3—13.

15. *GUNPOWDER* 1784 by Eclipse (s. to Russia).
3—9. (Own brother to Soldier 1779 by Eclipse).
3—7.

16. *PEGASUS* 1784 by Eclipse.
    4—7.
    1. *King Edward* (earlier Shum Sheer Jung) 1795 by Pegasus.
       6—8.
    2. *Novice* 1795 by Pegasus.
       ?—8.
    3. *Parnassus* 1797 by Pegasus.
       5—11.
    4. *Laura* 1800 by Pegasus.
       2—8. (Dam of Dr. Eady by Rubens).
    5. *Hippomenes* 1802 by Pegasus.
       2—8.

17. *DON QUIXOTE* 1784 by Eclipse.
    3—8. (Own brother to Erasmus and Alexander).
    1. *Sancho* 1801 by Don Quixote.
       3—4. L.
       C a n n o n - b a l l 1810 by Sancho.
       3—9. (Half-brother to Grimaldi and sire of many good hunters and steeplers).
       Counsellor 1821 by Cannon-ball (or by Childe Harold).
       5—8. (Half-bred).
    2. *Artichoke* 1802 by Don Quixote.
       3—8.
    3. *Amadis* 1807 by Don Quixote.
       4.
       1. P a l m e r i n 1816 by Amadis (s. to Russia).
          2 (May, once) —4.
          Aggravator 1832 by Palmerin.
          5—12. (Half-bred).
       2. M a g i c about 1820 by Amadis.
          A famous steepler. (Half-bred).

18. *SERPENT* 1786 by Eclipse.
    3—10.

2. **Stripling** 1765 by Marske.
   4—8.

3. **Y. Marske** 1771 by Marske.
   4.
   1. *RULER* 1777 by Y. Marske.
      3—5. L. (Half-brother to Rattler and Magnum Bonum).
      High Eagle 1790 by Ruler.
      3 (?) —9.
   2. *TRIMMER* 1788 by Y. Marske.
      3—8.
   3. *SHUTTLE* 1793 by Y. Marske.
      3—5.
      1. *Cambric* 1807 by Shuttle.
         2—8. (Ran and frequently won several times in a day). Dam 2 y. July, twice.
      2. *Engraver* 1807 by Shuttle.
         3—6. (Ran and frequently won several times in a day).

4. **Hephestion** 1771 by Marske.
4—9.
2. **MISS PROCTOR** (or Smallhopes) 1733 by Bartlet's Childers.
5—11. (Up to 13 year-old without winning).

Byerly Turk born about 1680.

1. BASTO 1702 by Byerly Turk.
6—8. (Sire of Old Ebony, Foundation Mare in Fam. 5).
2. JIGG about 1702 by Byerly Turk.
(Not run).
Partner (Mr. Croft's) 1718 by Jigg.
5—8. (Up to 10 year-old without winning).
1. **PARTNER** (Grisewood's) 1730 by Partner.
5—14. (15 year-old without winning).
(Sire of Miss Elliot, Grimcrack's Dam, Foundation Mare in Fam. 23).
2. **SEDBURY** 1734 by Partner.
4—10.
Tantivy 1749 by Sedbury.
4—11.
3. **OLD TRAVELLER** 1735 by Partner.
4—7.
1. **Skim** 1748 by Old Traveller.
4—8.
2. **Dainty Davy** 1752 by Old Traveller.
4—11.
DAVID 1766 by Dainty Davy.
4—12 (also in Give and Take Plates).
3. **Squirrel** 1754 by Old Traveller.
4—7.
1. *WEASEL* 1766 by Squirrel.
5—11.
2. *FURIBAND* 1767 by Squirrel.
3—10 (also in Give and Take Plates).
3. *SLIM* 1771 by Squirrel.
3—10.
4. **LITTLE JOHN** 1740 by Partner.
4—8. (Up to 10 year-old without winning).
5. **TARTAR** (earlier Partner) 1743 by Partner.
5—7.
(King) Herod 1758 by Tartar.
5—9.
1. *FLORIZEL* 1768 by Herod.
4—6.
1. *Diomed* 1777 by Florizel (s. to America).
3—6. D.
1. Grey Diomed 1785 by Diomed.
3—8.

2. G l a u c u s 1786 by Diomed.
3—10.
3. A g a m e m n o n 1790 by Diomed.
3—12.
2. *Ulysses* 1777 by Florizel (s. to Virginia).
3—10.
P l a y o r P a y 1791 by Ulysses (s. to Virginia).
3—9.
3. *Fortunio* 1779 by Florizel.
3—10.
S i r F e r d i n a n d (later King Bladud) 1792 by Fortunio.
2—12.
4. *Bustler* 1784 by Florizel.
2—9.
5. *Prizefighter* 1784 by Florizel.
2—9.
S w o r d s m a n 1796 by Prizefighter.
4—7.
1. Fencer 1807 by Swordsman.
4.
Vivian about 1824 by Fencer.
1834—1843 a famous steepler.
2. Spartacus 1808 by Swordsman.
3—9.
2. *MAGNET* 1770 by Herod.
4—9.
1. *Noodle* 1781 by Magnet.
3—8.
2. *Windlestone* 1783 by Magnet.
3—8.
3. *Shovel* 1785 by Magnet.
4—9.
3. *BACCHUS* 1771 by Herod.
(Not run).
1. *Rutland* 1783 by Bacchus.
4—9.
2. *Kitty* 1785 by Bacchus.
3—9.
3. *Bacchus* 1788 by Bacchus.
3—8.
4. *WOODPECKER* 1773 by Herod.
4—7.
1. *Seagull* 1786 by Woodpecker.
2—8.
2. *Chanticleer* 1787 by Woodpecker.
2 (April, 6 times) —8.
1. T r a v e l l e r 1797 by Chanticleer.
2—9.
2. B o b B o o t y 1804 by Chanticleer.
2 (Sept., twice) —4.
Napoleon 1824 by Bob Booty (1833 s. to France).
2—9.

3. *Buzzard* 1787 by Woodpecker (1804 s. to America).
 2 (Oct., twice) —7.
  1. Q u i z 1798 by Buzzard.
   3—9. L.
    1. Roller 1814 by Quiz.
     3—11. (Sire of many good steeplers).
    2. Euphrates 1816 by Quiz.
     6—13.
  2. D r e a d n o u g h t 1800 by Buzzard.
   3—8.
  3. B r a i n w o r m 1801 by Buzzard.
   2—8.
  4. B u s t a r d 1801 by Buzzard.
   2—10.
  5. C a s t r e l 1801 by Buzzard.
   3—4.
    1. Bustard 1813 by Castrel.
     3—5.
      Remnant 1833 by Bustard.
       4—10.
    2. Merlin 1815 by Castrel.
     2 (Aug., 3 times) —4.
      Lancastrian 1825 by Merlin.
       2 (Oct., twice, 1 w. o.) —8.
        Miss Mowbray about 1843 by Lancastrian.
         (Half-bred) 1852 winner in Liverp. Gr. Nation.
  6. S e l i m 1802 by Buzzard.
   4—6.
    1. Champion 1812 by Selim.
     3.
      Donnington 1828 by Champion.
       3—10.
    2. Sultan 1816 by Selim.
     2 (July, once) —8.
      1. Despot 1830 by Sultan.
       2—8. (Half-brother to David by Catton).
      2. Alpheus 1830 by Sultan.
       3.
        1. John Dory 1846 by Alpheus.
         3—9.
        2. Alonzo 1847 by Alpheus.
         3—9.
      3. Ishmael 1830 by Sultan.
       3 year-old in racing stable of Lord Jersey, but not run.
       Sire of many good steeplers.
        1. Abd-el-Kader about 1840 by Ishmael.
         A famous steepler. (Half-bred).
          1850 and 1851 winner in Liverp. Gr. Nation.
        2. The Switcher 1842 by Ishmael.
         A famous steepler.

4. Caliph 1832 by Sultan.
2—10.
5. Hampton 1833 by Sultan.
3.
Lady Flora 1838 by Hampton.
3—11.
6. Adrian 1834 by Sultan.
3—13.
7. Jereed 1834 by Sultan (1846 s. to Russia).
2. (Aug., twice).
1. Greatheart 1840 by Jereed.
3.
Gaylad 1846 by Greatheart.
3—10. (Half-bred, and half-brother to Gaffer Green by Obadiah).
2. Bishop of Romford's Cob 1840 by Jereed.
3—10.
3. Thurgarton 1841 by Jereed.
5—10. (Half-bred) and in Steeplechases.
3. Langar 1817 by Selim.
2 (Oct., twice) —9.
1. Philip I. 1828 by Langar.
2. (Sept., twice, and 1 w. o.).
Montague 1846 by Philip I.
3—8.
2. Potentate 1832 by Langar.
2—12.
3. Leander 1832 by Langar.
3.
The Marchioness 1846 by Leander.
3—9. (Half-bred).
7. R u b e n s 1805 by Buzzard.
3—5.
1. Gainsborough 1813 by Rubens.
3—7. Dam 2 year-old Oct., once.
2. Wouvermans 1815 by Rubens.
4—8. Dam 2 year-old June, twice.
3. Dr. Eady 1816 by Rubens and Laura 2—8
6—12. Dam 2 year-old June, twice.
4. Hampden 1819 by Rubens.
3—5.
Guildford 1826 by Hampden.
2—9.
5. Vandyke 1828 by Rubens.
5—10. (Half-bred, also in hurdle races).
11 year-old in steeplechases.
4. *Olive* 1787 by Woodpecker.
2—10.
5. Y. *Woodpecker* 1794 by Woodpecker.
(Not run).

1. W o o d m a n 1807 by Y. Woodpecker.
3—8.
Charity 1830 by Woodman.
5—9. (Half-bred). 14 year-old, steeplechases. A famous
1841 winner in Liverpl. Gr. Nation. [steepler.
2. S l e n d e r B i l l y 1808 by Y. Woodpecker.
3—9.
6. *Brother to Vivaldi* 1799 by Woodpecker.
4—8. (Sire of many good hunters).
5. *FITZHEROD* 1773 by Herod.
(Not run).
Mufti 1783 by Fitzherod.
3—9.
6. *IL'MIO* 1774 by Herod.
3—5.
Scorpion 1785 by Il'mio.
3—12.
7. *JUSTICE* 1774 by Herod.
3—4.
1. *Trifle* 1782 by Justice.
3—9.
2. *Rasper* (later Douglas) 1782 by Justice.
3—9.
3. *Mentor* 1784 by Justice.
3—11. (Half-brother to Sweetbriar).
4. *Midnight* (later Whip) 1792 by Justice.
2—10.
8. *LABURNUM* 1774 by Herod.
4—9.
9. *HIGHFLYER* 1774 by Herod.
3—5.
1. *Rockingham* 1781 by Highflyer.
4—7. Dep. (6 year-old, 17 races won).
1. P a t r i o t 1790 by Rockingham.
2—8.
2. B e n n i n g t o n 1791 by Rockingham.
3—8.
2. *Delpini* (earlier Hackwood) 1781 by Highflyer.
3—5.
1. G r i m a l d i 1802 by Delpini (Half-brother to Cannon-ball).
5—8.
1. Grimaldi 1820 by Grimaldi.
1832—1836 a famous steepler.
2. Pantomime 1820 by Grimaldi
4—16 in Hunter Stakes.
(Half-breed, s. Sporting Magazine, Vol. 89).
2. B u s t l e r 1807 by Delpini.
4—6.
The Major 1822 by Bustler.
3—10.
3. E p p e r s t o n 1808 by Delpini.
4—8.

3. *Harlot* (earlier Connilass) 1783 by Highflyer.
4—13.
4. *Sir Peter* 1784 by Highflyer.
3—5. D.
1. A m b r o s i o 1793 by Sir Peter.
3—6. L.
Huntingdon 1806 by Ambrosio.
4—9. (Ran only in unimportant races against very inferior horses). Dam 2 year-old May, 10 times.
2. M r. T e a z l e 1793 by Sir Peter.
(Not run).
Y. Vestris 1806 by Mr. Teazle.
3.
Mathew 1838 by Y. Vestris.
6—9. A famous steepler.
1847 winner in Liverp. Gr. Nation.
3. S i r S o l o m o n (earlier Tankersley) 1796 by Sir Peter.
3—6.
Cambrian 1804 by Sir Solomon.
3—11.
4. H a p h a z a r d 1797 by Sir Peter.
3—9.
1. Don Cossack 1810 by Haphazard.
3—5.
1. Prosody 1818 by Don Cossack.
3—10. (Often many times in a day).
2. The Tartar 1821 by Don Cossack.
6—8. (Not in Stud Book).
3. Reform 1829 by Don Cossack.
3—9. (Often many times in a day).
(Not in Stud Book).
2. Filho da Puta 1812 by Haphazard.
2 (Sept., once, and 1 w. o.) —4. L.
1. Troy 1820 by Filho da Puta.
3.
Pumpkin 1829 by Troy.
3—9.
2. Conductor 1820 by Filho da Puta.
3—4.
Oswald 1832 by Conductor.
3—10.
3. Forester Lass 1821 by Filho da Puta.
6—8.
4. Haji Baba 1821 by Filho da Puta.
3—9.
5. Orthodox 1821 by Filho da Puta.
3—11. Dam 2 year-old May, twice.
6. Dr. Faustus 1822 by Filho da Puta.
3—9.
1. Jesuit 1834 by Dr. Faustus.
A famous steepler. (Half-bred).
Ran and won at 24 year-old?

2. Obadiah 1834 by Dr. Faustus.
2 (Sept., once, and 1 w. o.) —3.
Sailor (later Gaffer Green) 1839 by Obadiah.
6—14. (Half-bred, and half-brother to Gaylad by Greatheart).
(Often many times in a day)
3. Tupsley 1837 by Dr. Faustus.
3—4.
Huntsman 1853 by Tupsley.
3—4.
1862 winner in Liverp. Gr. Nation.
4. The Chandler 1836 by Dr. Faustus.
A famous steepler. (Half-bred).
1848 winner in Liverp. Gr. Nation.
7. Jocko 1823 by Filho da Puta.
3—9.
8. Chico 1825 by Filho da Puta.
3—11.
9. Independence 1826 by Filho da Puta or by Sher-
2—9. |wood 1820 by Filho da Puta
10. Giovanni 1828 by Filho da Puta.
3—7. (8 year-old 3 times very well run).
(Half-brother to Potentate by Langar).
3. Victorine 1816 by Haphazard.
4—9.
4. Figaro 1819 by Haphazard (1831 s. to Mecklenburg).
3—6.
Isaac 1831 by Figaro.
2—14. (Up to 15 year-old, also in hurdle races)
5. Walton 1799 by Sir Peter.
3—6.
1. Phantom 1808 by Walton (1832 s. to Mecklenburg).
3—4. D.
1. Spectre 1815 by Phantom.
3—5.
Granby 1823 by Spectre.
3—8.
2. Vanish 1825 by Phantom (1836 s. to East Prussia).
2 (June, 4 times) —7.
Sunbeam 1833 by Vanish.
2—8.
2. Partisan 1811 by Walton.
3—5.
1. Mameluke 1824 by Partisan.
3—5. D.
Zethus 1831 by Mameluke.
3—10.
2. Patron 1826 by Partisan.
3. 2.

Peter Simple about 1839 by Patron.
A famous steepler. (Half-bred).
1849 and 1853 winner in Liverp. Gr. Nation.
3. Venison 1833 by Partisan.
2 (July, once) —4.
1. New Forestdeer 1841 by Venison.
3—10. (Half-bred).
2. Herbert 1846 by Venison.
2—8.
4. Gladiator 1833 by Partisan.
3. (2nd D).
Napier 1840 by Gladiator.
2 (Sept., 3 times) —3.
Indian Warrior 1849 by Napier.
2—8.
3. Waterloo 1814 by Walton.
3.
1. Conquest 1822 by Waterloo.
3—5. (Ran and won often several times in a day).
2. Caleb 1828 by Waterloo.
2—8.
4. St. Patrick 1817 by Walton.
3—4. L.
1. Daniel 1832 by St. Patrick.
3—9.
2. St. Francis 1835 by St. Patrick.
2—8.
3. Garry Owen 1837 by St. Patrick.
2—10.
6. Ditto 1800 by Sir Peter.
3—7. D.
Luzborough 1820 by Ditto.
4—8.
7. Sir Paul 1802 by Sir Peter.
3—5.
Paulowitz 1813 by Sir Paul.
3—7.
1. Cain 1822 by Paulowitz.
3—5.
1. Ion 1835 by Cain.
2 (July, 4 times) —4.
Poodle 1849 by Ion.
2—9. Dam 2 year-old Oct., once.
2. Barney Bodkin 1830 by Cain.
2—8.
2. Little Boy-blue 1825 by Paulowitz.
2—9.
3. Changeling 1828 by Paulowitz (or Swap).
3—9. Dam 2 year-old Sept., once.
8. Cardinal York 1804 by Sir Peter.
3—5.

Advance 1815 by Cardinal York.
3—5.
1. Vanguard 1835 by Advance.
4. A famous steepler. (Half-bred).
1843 winner in Liverp. Gr. Nation.
2. Pioneer 1840 by Advance.
A famous steepler. (Half-bred).
1846 winner in Liverp. Gr. Nation.
9. P o u l t o n 1805 by Sir Peter.
3—8.
10. C l i n k e r 1805 by Sir Peter.
3—4. (Half-brother to Anticipation).
Clinker 1806 by Clinker.
A famous steepler.
5. *Star* 1785 by Highflyer (1811 s. to America).
2 (Oct., once) —6.
M r. G u n d y 1804 by Star.
3—9.
6. *Skyscraper* 1786 by Highflyer.
3—8. D.
7. *Walnut* 1786 by Highflyer.
3—5.
L i g n u m V i t a e 1797 by Walnut.
3—8. (Sire of many good racers).
8. *Phaeton* 1787 by Highflyer.
3—11.
9. *St. George* 1789 by Highflyer.
3—10.
T o p s y - T u r v e y 1805 by St. George.
7—10 . (Died at 16 year-old through physic in training for Welter Stakes in Bibury).
Nimrod 1820 by Topsy-Turvey.
6—10.
10. *Sling* 1789 by Highflyer.
3—11.
11. *Tidy* 1789 by Highflyer.
3—8.
12. *Grouse* 1790 by Highflyer
3. (4 and 5 year-old without winning).
F i r s t F r u i t s 1797 by Grouse.
2—9.
13. *Diamond* 1792 by Highflyer (s. to France).
3—8.
1. Q u e e n of D i a m o n d s 1809 by Diamond.
3—7. (Own sister to King of Diamonds).
2. K i n g o f D i a m o n d s 1810 by Diamond.
3—8.
King of Trumps 1827 by King of Diamonds.
3—8.
14 *Lark* 1792 by Highflyer.
3—8.

15. *Louisa* 1792 by Highflyer.
4—9.
16. *Delamere* 1793 by Highflyer.
3—8.
10. *BOURDEAUX* 1774 by Herod.
4—6. (Own brother to Florizel).
Highlander 1783 by Bourdeaux.
3—9.
11. *GUILDFORD* 1775 by Herod.
4—9.
12. *BOXER* 1776 by Herod.
3—8.
13. *ROVER* (later Tom Tug or Tug) 1777 by Herod.
3—9.
Cornet 1792 by Rover.
3—9.
14. *GOLDEN DUN* 1777 by Herod.
3—11.
15. *DRONE* 1777 by Herod (s. to America).
3—10.
16. *ANVIL* 1777 by Herod.
4—9.
17. *FORTITUDE* 1777 by Herod.
4—7.
John Bull 1789 by Fortitude.
3. D.
Admiral Nelson 1795 by John Bull (s. to America).
3—8. Dam 2 year-old July, 3 times.
18. *PHÖNOMENON* 1780 by Herod (1803 s. to America).
3—5. L.
Huby 1788 by Phönomenon s. to Russia).
3—8.
Driver 1798 by Huby.
3—9.
19. *BAGOT* 1780 by Herod.
4.
1. *Master Bagot* 1787 by Bagot.
3—5.
1. Dawdle 1795 by Master Bagot.
2—8. (Half-bred).
2. Hollyhock 1804 by Master Bagot.
4—8.
Hesperus 1820 by Hollyhock.
4—10.
2. *Loyal* 1796 by Bagot.
3—8. (Half-bred).

2. **Soldier** 1758 by Tartar.
4—9.

Godolphin Arabian born 1724.

1. **CADE** 1734 by Godolphin Arabian.
   6. (7 to 11 year-old without winning).
      1. **Trunnion** 1747 by Cade.
         4—10.
            1. **MOTHERN BROWN** 1771 by Trunnion (Dam of Jerry Sneak).
               4—11.
            2. **TITANIA** 1774 by Trunnion.
               4—11.
      2. **Y. Cade** 1747 by Cade.
         (Not run).
            1. **BACHELOR** 1758 by Y. Cade.
               4—9.
            2. **HUNCAMUNCA** 1759 by Y. Cade.
               7—11.
            3. **DANIEL** 1762 by Y. Cade.
               4—10.
            4. **CARABINEER** 1765 by Y. Cade.
               4—10. (Half-brother to Morwick Ball by Regulus).
      3. **Changeling** 1747 by Cade.
         6. (Own brother to Matchem).
            LE SANG 1759 by Changeling.
               4—8.
      4. **Scampston Cade** 1747 by Cade.
         5—6.
            YOUNG DAVY 1760 by Scampston Cade.
               4—10.
      5. **Matchem** 1748 by Cade.
         5—10.
            1. **TURF** 1760 by Matchem.
               4—6.
                  Mentor 1773 by Turf.
                     3—5.
                        BUFFER 1784 by Mentor.
                           4—10.
            2. **BANKER** 1761 by Matchem.
               3—9.
                  Tygress 1770 by Banker.
                     5—11.
            3. **CONUNDRUM** 1762 by Matchem.
               4—8. (16 year-old without winning).
                  Thetford 1772 by Conundrum.
                     4—9.
            4. **RANTHOS** 1763 by Matchem.
               4—9.
            5. **CHYMIST** 1765 by Matchem.
               4—6.

Druggist 1775 by Chymist.
4—8. 7 year-old Gold Cup in Chester and 6 other races.
6. **PANTALOON** 1767 by Matchem.
4—6.
1. **Merry Andrews** 1783 by Pantaloon.
2—9.
2. **Buffer** 1784 by Pantaloon.
4—8.
7. **GOLDFINCH** 1767 by Matchem.
3—10.
8. **CONDUCTOR** 1767 by Matchem.
4—6.
1. **Imperator** 1776 by Conductor.
3—8.
PIPATOR 1786 by Imperator.
2 (July, once) —7.
Remembrancer 1800 by Pipator.
3—4. L.
R e c o r d o n 1807 by Remembrancer.
3—5.
Welcome 1819 by Recordon.
(Not run).
Sir William about 1830 by Welcome.
A famous steepler. (Half-bred).
1838 winner in Liverp. Gr. Nation.
2. **Trumpator** 1782 by Conductor.
3—4.
1. *AIMATOR* 1790 by Trumpator (s. to Russia).
3—8. (Half-brother to Aimwell D).
2. *PAYNATOR* 1791 by Trumpator (s. to Russia).
2 (July, 4 times) —9.
1. *Offa's Dyke* (earlier Occator) 1807 by Paynator.
5—9.
2. *Marksman* 1808 by Paynator.
5—18.
3. *Dr. Syntax* 1811 by Paynator.
3—12.
1. B e e's W i n g 1833 by Dr. Syntax.
2—9. Dep.
2. T h e D o c t o r 1834 by Dr. Syntax.
2—9.
3. A j a x 1838 by Dr. Syntax.
3—8.
4. F a m a 1838 by Dr. Syntax.
3—8.
5. S y n t a x i n a 1838 by Dr. Syntax.
2—8.
6. H o p e about 1838 by Dr. Syntax.
A famous steepler. (Half-bred).

3. *REPEATOR* 1791 by Trumpator.
3—9.
4. *SORCERER* 1796 by Trumpator.
3—5.
1. *Soothsayer* 1808 by Sorcerer (1823 s. to Russia).
3—5. L.
1. W e l b e c k 1815 by Soothsayer.
(Not run).
Bedlamite 1823 by Welbeck.
3—4.
Saul 1835 by Bedlamite.
3—10.
2. H e l e n u s 1821 by Soothsayer (1835 to Germany)
3—8. and Zuleika 4—8
2. *Comus* 1809 by Sorcerer.
3—4.
1. R e v e l l e r 1815 by Comus.
3—8. L.
1. Oberon 1827 by Reveller.
3—11.
2. Bosphorus 1836 by Reveller.
3—8.
2. C o r i n t h i a n 1819 by Comus.
3—5. (Half-brother to Jerry).
Russel 1826 by Corinthian.
3—8.
3. H u m p h r e y C l i n k e r 1822 by Comus.
3—5.
Melbourne 1834 by Humphrey Clinker.
3—5. (6 year-old very good but did not win).
Sir Tatton Sykes 1843 by Melbourne.
3—4. L. 2.
Mr. Sykes 1850 by Sir Tatton Sykes.
2—9. (Half-bred).
3. *Smolensko* 1810 by Sorcerer.
3—4. D. 2. (Sire of many racers which frequently ran several races in one day, as, for instance, Thorngrove, 1827).
1. B a n k e r 1816 by Smolensko.
3—7. Dam 2 year-old August, twice.
2. N a u g h t y T o m m y 1820 by Smolensko.
6—11.
3. J e r r y 1821 by Smolensko.
3. L. (Sire of many 2 year-old winners).
Tomboy 1829 by Jerry.
3—5.
Nutwith 1840 by Tomboy.
2 (June, 3 times) —3. L.
1. Noisette 1850 by Nutwith.
2—8.

2. Knight of Kars 1855 by Nutwith.
3.
1. The Colonel 1863 by Knight of Kars. A famous steepler. (Half-bred). 1869 and 1870 winner in Liverp. Gr. Nation. (s. to Germany).
2. New Oswestry 1864 by Knight of Kars. (Half-bred). A famous steepler, and sire of many good steeplers, amongst which were :
1. Zoedone 1877 by New Oswestry. 1883 winner in Liverp. Gr. Nat.
2. Savoyard 1878 by New Oswestry. 1887 2nd in Liverp. Gr. Nat.

4. *Bourbon* 1811 by Sorcerer (s. to Russia).
3—6.
1. Comte d'Artois 1820 by Bourbon.
3—8.
2. Alderman 1822 by Bourbon (s. to Russia).
2—7. (2nd L).
3. Fleur de Lis 1822 by Bourbon.
3—8. Dcp. Gcp. 2 × (8 year-old Gcp.).

5. *VERNATOR* 1796 by Trumpator.
3—5.
Romeo 1804 by Vernator.
4—9.

6. *REBEL* 1796 by Trumpator.
3—9. Dam 2 year-old Oct., once.

7. *CHIPPENHAM* 1796 by Trumpator.
3—8.

8. *SIR DAVID* 1801 by Trumpator (s. to Russia).
2—9.

9. **ALFRED** 1770 by Matchem.
4. (Own brother to Conductor).
Tickle Toby 1786 by Alfred.
4—9.

10. **CRITIC** 1771 by Matchem.
3—11.

11. **MAGNUM BONUM** 1773 by Matchem (s. to Russia).
4—7.
Ratler 1784 by Magnum Bonum.
4—9. (Half-brother to Ruler by Y. Marske).

12. **ESPERSYKES** 1775 by Matchem.
(Not run).
1. **Conqueror** 1779 by Espersykes.
4—11. (9 year-old Gold Cup. Chester).
2. **Sir Peter Pellet** 1780 by Espersykes.
3—8.

6. **Sportsman** 1753 by Cade.
4—8.

7. **Hero** (earlier Slape) 1753 by Cade.
5—13.
1. **FRIAR** 1768 by Hero.
4—11. (Sire of many good racers).
2. **ADONIS** 1772 by Hero.
5—11.
3. **LALAGE** 1776 by Hero.
4—12. (Dam of Y. Lalage 1797, s. p. 69).

8. **Northumberland** 1754 by Cade.
4—5.
BUFF 1766 by Northumberland.
4—12.

9. **Silvio** 1754 by Cade.
4—11.

10. **Sprightly** 1754 by Cade.
4—9.

11. **Flylax** 1756 by Cade.
6—11.

12. **Emilius** about 1756 by Cade.
?
MAYDUKE 1765 by Emilius.
7—13. (Also in Give and Take Plates).

2. **DORMOUSE** 1738 by Godolphin Arabian.
7—11. (Also in Give and Take Plates).
1. **Valiant** 1755 by Dormouse.
4—10.
2. **Dorimont** 1758 by Dormouse.
4—10. (Sire of many good racers).

3. **REGULUS** 1739 by Godolphin Arabian.
6—7.
1. **Cato** 1748 by Regulus.
4—11.
2. **Trajan** 1748 by Regulus.
5—9.
3. **Careless** 1751 by Regulus.
4—9.
4. **Dionysius** 1752 by Regulus.
4—9.
FORESTER 1765 by Dionysius.
4—12.
5. **Apollo** 1755 by Regulus.
4—10.
JOLLY BACCHUS 1768 by Apollo.
3—9.
6. **Sultan** 1757 by Regulus.
6—9.
7. **Morwick Ball** 1762 by Regulus.
4—7. (Half-brother to Carabineer by Y. Cade).

1. **CAVENDISH** (earlier Quintus) 1784 by Morwick Ball.
3—8.
2. **GUSTAVUS** 1785 by Morwick Ball.
4—8.

8. **Sejanus** 1764 by Regulus.
4. (Half-brother to Herod).
CHEROKEE 1780 by Sejanus.
4—10.

9. **Bucephalus** 1764 by Regulus.
4—9.

10. **Denmark** 1764 by Regulus.
4—8.

4. THE GOWER STALLION 1740 by Godolphin Arabian.
(Not run).
Sweepstakes 1749 by The Gower Stallion.
5—10.

5. BABRAHAM 1740 by Godolphin Arabian.
6—9.

1. **Alcides** 1753 by Babraham.
5—7.
TONZER 1768 by Alcides.
4—9.
2. **Bosphorus** 1754 by Babraham.
4—9.
3. **Traplin** 1754 by Babraham.
4—9.
4. **Americus** 1755 by Babraham.
4—11.
5. **Cardinal Puff** 1760 by Babraham.
4—9.
6. **Fop** 1760 by Babraham.
4—11.

6. BAJAZET 1740 by Godolphin Arabian
5—10.
Selim 1760 by Bajazet.
5—9.

7. BLANK 1740 by Godolphin Arabian.
5—10.

1. **Lottery** 1752 by Blank.
5—11.
2. **Contest** 1753 by Blank.
5—9.
3. **Horatius** 1756 by Blank.
4—9.
4. **Antinous** 1758 by Blank.
4—9.
5. **Pancake** 1759 by Blank.
4—10.
6. **Chatsworth** 1762 by Blank.
4—9.

7. **Pacolet** 1763 by Blank.
4—7. (Also in Give and Take Plates).
Y. PACOLET 1780 by Pacolet.
3—4.
Citizen 1785 by Y. Pacolet.
4—9. (s. to India)
8. **Paymaster** (earlier Jesmond) 1766 by Blank.
4—8. (Sire of many good racers).
9. **Ancaster** 1768 by Blank.
5—10.
8. **OLD ENGLAND** 1741 by Godolphin Arabian.
5—8.
Amaranthus 1766 by Old England.
4—9.
9. **MOGUL** 1741 by Godolphin Arabian.
Whistlejacket 1749 by Mogul.
4—10.
CORIOLANUS 1762 by Whistlejacket.
4—7.
Coquette 1783 by Coriolanus.
5—8.
10. **WHITENOSE** 1742 by Godolphin Arabian.
8.
11. **MIRZA** 1749 by Godolphin Arabian.
6—9.
12. **CRIPPLE** 1750 by Godolphin Arabian.
6. ?
1. **Gimcrack** 1760 by Cripple.
4—11.
2. **Tantrum** 1760 by Cripple.
8—10. (Sire of Termagant 1772).
COPPERBOTTOM 1776 by Tantrum.
3—10.
13. **LOFTY** 1753 by Godolphin Arabian.
4—6.
Slim 1762 by Lofty.
4—11.

Alcock's Arabian born about 1703.

1. **CRAB** 1722 by Alcock's Arabian.
5—7.
1. **Grasshopper** 1731 by Crab.
5—9.
2. **Crab** (Routh's) 1736 by Crab.
5—9. (Up to 12 year-old without winning).
3. **Rib** 1736 by Crab.
6—9.
4. **Bustard** 1741 by Crab.
6—8. (Beaten by Othello as a 9 year-old; own brother to Othello and Oroonoko).

1. **GAMAHOE** about 1758 by Bustard.
    1. **Noble** 1767 by Gamahoe.
       4—11.
    2. **Hippolitus** 1767 by Gamahoe.
       4—13.
    3. **Olympus** 1767 by Gamahoe.
       4—8.
    4. **Cromaboo** 1774 by Gamahoe.
       4—6.
        1. *DUCHESS* 1785 by Cromaboo.
           3—8.
        2. *SHAMROCK* 1789 by Cromaboo.
           3—11.
    5. **Olympia** 1777 by Gamahoe.
       6—11.
    6. **Waterman** 1779 by Gamahoe.
       6—10.
    7. **Farmer** 1779 by Gamahoe.
       6—8.
    8. **Ranunculus** 1782 by Gamahoe.
       4—10.
2. **LENNOX** 1766 by Bustard.
   5—7.
    1. **Tom Turf** 1781 by Lennox.
       4—7. (Up to 9 year-old without winning).
    2. **Peeping Tom** 1782 by Lennox.
       3—9.

5. **Othello** (or Black and All Black) 1743 by Crab.
   5—9. (Also in Give and Take Plates).
6. **Why Not** 1744 by Crab.
   5—8.
7. **Crab** 1744 by Crab.
   4—12.
    1. **MILKSOP** 1760 by Crab.
       5—13.
    2. **CHAMPAIGNE** 1764 by Crab.
       4—10.
8. **Oroonoko** 1745 by Crab.
   5—6.
   FLASHING MOLLY 1756 by Oroonoko.
   8—11.
9. **Shepherd's Crab** 1747 by Crab.
   (Not run).
   SPY 1759 by Shepherd's Crab.
   4—8.
10. **Spectator** 1749 by Crab.
    5—8.
    1. **SULPHUR** 1762 by Spectator.
       4—9.

2. **MARK ANTHONY** 1767 by Spectator.
3—9. (Half-brother to Highflyer).
1. **George** 1780 by Mark Anthony.
3—8.
2. **Mark-ho** 1783 by Mark Anthony.
3—8.
3. **DAMPER** 1769 by Spectator.
4—10.
11. **Brilliant** 1750 by Crab.
4—6.
1. **NABOB** 1762 by Brilliant.
4—9.
2. **BELLARIO** 1763 by Brilliant.
3—8.
3. **RICHMOND** 1763 by Brilliant.
4—8. (Sire of many good racers in Ireland).
2. **GENTLEMAN** 1723 by Alcock's Arabian.
5—11.

The Darcy White Turk born about 1670.
(or Sedbury Turk).

HAUTBOY about 1690 by Darcy White Turk.
1. **Grey Hautboy** about 1698 by Hautboy.
1. **BAY BOLTON** 1705 by Grey Hautboy.
5.
1. (Godolphin's) **Whitefoot** 1719 by Bay Bolton.
5—9.
MOLOTTO 1736 by Whitefoot.
5—8.
2. **Fearnought** 1725 by Bay Bolton.
5—8.
3. **Old Starling** 1727 by Bay Bolton.
4—7.
1. *ANCASTER STARLING* 1738 by Old Starling.
5—9. (Also in Give and Take Plates).
2. *TORISMOND* 1739 by Old Starling.
5—7. (Also in Give and Take Plates).
3. *SKIM* 1746 by Old Starling.
4—6.
Tiney 1756 by Skim.
4—13.
4. *JENNY JESSAMY* 1748 by Old Starling.
5—9.
5. *PERSEUS* 1754 by Old Starling.
5—9.
4. **Looby** (Bolton) 1728 by Bay Bolton.
5—12.
2. **LAMPRIE** 1715 by Grey Hautboy.
7—10. (Up to 10 year-old without winning. Own brother to Bay [Bolton.)

2. **Clumsey** about 1700 by Hautboy.
1. **OLD FOX** 1714 by Clumsey.
5—9.
1. **Goliah** 1730 by Old Fox.
6.
1. *CHAMPION* 1739 by Goliah.
5—10.
2. *HUNT'S JIGG* 1741 by Goliah (Mare with—1 free [generation.)
4—10.
Jigg of Jiggs 1745 by Hunt's Jigg (and the dam [by Hunt's Jigg).
4—7.
2. **Merry Andrew** 1730 by Old Fox.
5—11. (Up to 13 year-old without winning).
FRIBBLE 1746 by Merry Andrew.
6—8.
3. **Cub** 1739 by Old Fox.
5—8. (Also in Give and Take Plates).
CLERICUS 1763 by Cub.
4—11.
2. **FOX CUB** 1714 by Clumsey.
8.
Dunkirk 1725 by Fox Cub.
6—11.
3. **Old Windham** 1719 by Hautboy.
5—11.
1. **CINNAMON** 1722 by Old Windham.
6—7. (Up to 9 year-old without winning)
1. **Dismal** 1735 by Cinnamon.
5—8. (Up to 10 year-old without winning).
2. **Brisk** 1737 by Cinnamon.
5—8.
2. **GREYLEGS** 1725 by Old Windham.
5—6. (Up to 10 year-old without winning).

Belgrade Turk born about 1710.

Y. BELGRADE about 1729 by Belgrade Turk.
1. **Volunteer** 1735 by Y. Belgrade.
6—8.
2. **Old Standard** 1736 by Y. Belgrade.
5—6.
JASON 1749 by Old Standard.
4—11. (Sire of many good racers).

Lister Turk born about 1680.

1. **(LISTER) SNAKE** about 1705 by Lister Turk.
    Driver (Beavers) 1732 by Lister Snake.
      5—8.
        LITTLE DRIVER 1743 by Driver.
          5—12. (Give and Take Plates).
            1. **Y. Driver** 1758 by Little Driver.
              4—7. (Also in Give and Take Plates).
            2. **Cicero** 1765 by Little Driver.
              4—10
2. **CONEYSKINS** 1712 by Lister Turk.
    5—7. (8 year-old without winning).

Holderness Turk born about 1698.

HARTLEY'S BLIND HORSE about 1720 by Holderness Turk.
  Forester (Croft's) 1736 by Hartley's Blind Horse.
    6.
      1. **GUSTAVUS** 1745 by Forester.
        5—11.
      2. **RIPON** 1749 by Forester.
        5—11.

Oxford Bloody-Shouldered Arabian born about 1710.

1. **BOLTON SWEEPSTAKES** 1722 by Bloody-Shouldered Arabian.
    5—6. (Up to 11 year-old without winning).
    Turner's Sweepstakes 1743 by Bolton Sweepstakes.
      (Not run).
        TRENTHAM 1766 by Turner's Sweepstakes.
          3—10.
            Driver 1783 by Trentham.
              4—8.
2. **BRISK** 1725 by Bloody-Shouldered Arabian.
    5. (Up to 9 year-old without winning).

If in above schedule all horses born before 1800 and all steeplechasers are left out, there remains 214 horses which have won at seven years and older. 132 of them have parents which did not run as two-year-olds. 53 come from sires which ran as two-year-olds (only 6 of them before June), 21 come from dams which ran as two-year-olds (only 4 of them before June), and only in 8 cases did both parents run as two-year-olds. Of these 8, 2, namely Master Henry and Lanercost, won races up to the age of only seven inclusive.

Further, the sires and dams ran on an average less than twice as two-year-olds. Horses which only won up to the seventh year inclusive are only mentioned in exceptional cases, *i.e.*, Alice Hawthorn, whose sire, Muley Moloch, ran as a two-year-old in May, but the dam, granddam and great-granddam of Alice Hawthorn did not run at all. Such and similar compensations may often be found in the cases mentioned above.

I do not claim that the above tables are complete, and mistakes may have, here and there, crept in. Everyone who has studied old horse-race calendars will know how difficult and wearying such tables are, and that mistakes are very difficult to avoid. Taking it altogether, however, we may safely draw the following conclusions from the above-named dates :—

1. Performances on the flat at a great age are more certainly inherited from sires and dams who did not run themselves as two-year-olds than from those who did. The running as two-year-olds in more than two consecutive generations seems to deprive the parents of the suitability to produce race-horses who run for long with success.

2. The using of horses on the racecourse up to a great age seems to strengthen their breeding power in producing first-class racehorses and prominent stud stallions. The most significant examples of this are the following champions of Thoroughbreds which appear almost in every pedigree of our present day Thoroughbred horses several times, namely, Regulus, Woodpecker, Buzzard, Pipator, Election, Paulowitz, Master Henry, Little Red Rover, Lanercost and Collingwood, won up to their seventh year inclusive. Imperator, Chanticleer, Hambletonian, Orville, Catton, Reveller and Sultan, won up to their eighth year inclusive. Herod, Mark Antony, Joe Andrews, Paynator, Haphazard, Quiz, Cerberus and Langar, won up to their ninth year inclusive. Matchem, PotSos and Gohanna, won up to their tenth year inclusive. Squirt, grandsire of Eclipse, and Mambrino, foundation stallion of the American trotter, ran up to their eleventh year inclusive, although they only won up to their eighth year inclusive. Dr. Syntax, sire of Bee's Wing, which as a nine-year-old won four races, won again as a twelve-year-old three good races. Out of the great number of the chief founders of Thoroughbreds which won as six-year-olds, let me here mention only the following eight : Eclipse, Waxy, Whalebone, Whisker, King Fergus, Beningbrough and Touchstone.

3. The use of stallions with race performances at a great age for breeding purposes decreases more and more during the first half of the nineteenth century. In spite of the increase of Thoroughbred breeding, the examples of prominent performers at a great age already diminish before the middle of the nineteenth century (see tables, pages 108-141).

4. The most famous steeplechasers in the first half of the nineteenth century are descended, with few exceptions, from parents which did not run as two-year-olds.

5. Most stallions and mares which ran as two-year-olds, and yet pro-

duced horses which could run for long successfully, ran as two-year-olds late in the year, and seldom more than once or twice.

As in our time nearly everything which is healthy runs as a two-year-old, it is remarkable that in examining the question from this point of view, there are still actually brought out points which speak against two-year-old races, especially against the early and frequent ones. In the last ten years, up to and inclusive of 1906, 63 horses born in England or Ireland still won flat races as eight-year-olds and older. The number 63 is a very small one considering that the breeding is to-day five to ten times more extensive. Therefore a retrogression in this respect is distinctly recognisable. Of these 63 horses, 27 have dams which never ran as two-year-olds. Of the remaining 36 dams, only 14 ran before the 1st of June, generally only one to three times; 3 ran seven times; 2 eight times, and 1 ten times. The above 63 horses have 50 different sires, of which 9 did not run as two-year-olds. Of the remaining 41 sires, only 19 ran before the 1st of June as two-year-olds. Osbeck ran and won longest—up to its twelfth year. He was born in 1895 by Common, who did not run as a two-year-old, and his dam Alibech ran once as a two-year-old in September.

Also, several American and Australian horses won in England as eight-year-olds and older. Amongst the latter is especially to be mentioned Australian Star 1896, by Australian Peer and Colours, who won as an eight-year-old a Handicap in Alexandra Park, $1\frac{1}{4}$ miles, 9 stone, 12 lbs., against five four-year-olds, with 8 stone to 9 stone. Further, Merman 1892, by Grand Flaneur out of Seaweed, who, as an eight-year-old, won the Gold Vase at Ascot, $2\frac{1}{2}$ miles, carrying 9 stone, 4 lbs., against the four-year-old Scintillant, and Perth (under 9 stone), and three others. Australian Star, as well as Merman, come from dams which did not run as two-year-olds. Also, Australian Peer, the sire of Australian Star, did not run as a two-year-old, and Grand Flaneur, a marvel on the Australian racecourse, and sire of Merman, ran and won as a two-year-old only once, in January, which month, for the sake of comparison, corresponds to our July.

To further show the hardness and stamina of the Thoroughbred up to about the middle of the nineteenth century, the following examples of excellent performances on the flat may serve. Of course, there are some horses given which, from the point of view of the regular racecourse frequenter, belong to an inferior class.

No. 1. Partner 1730 by Partner.

ran	5 year-old	2 times,	won	2 times.
,,	6 ,,	6 ,,	,,	5 ,,
,,	7 ,,	3 ,,	,,	2 ,,
,,	8 ,,	6 ,,	,,	1 ,,
,,	9 ,,	3 ,,	,,	1 ,,
,,	10 ,,	3 ,,	,,	0 ,,
,,	11 ,,	4 ,,	,,	2 ,,
,,	12 ,,	3 ,,	,,	1 ,,
,,	13 ,,	4 ,,	,,	4 ,,
,,	14 ,,	3 ,,	,,	2 ,,
,,	15 ,,	1 ,,	,,	0 ,,
ran		38 times,	won	20 times.

No. 2. Black Chance 1732 by Hutton's Bay Barb.

ran	5 year-old	2 times,	won	2 times.	
,,	6 ,,	6 ,,	,,	5 ,,	only in King's Pl.
,,	7 ,,	3 ,,	,,	2 ,,	incl. 1 King's Pl.
,,	8 ,,	6 ,,	,,	6 ,,	
,,	9 ,,	4 ,,	,,	2 ,,	
,,	10 ,,	1 ,,	,,	1 ,,	
,,	11 ,,	without report.			
,,	12 ,,	2 times,	won	1 ,,	
,,	13 ,,	1 ,,	,,	1 ,,	
,,	14 ,,	3 ,,	,,	2 ,,	
ran		28 times,	won	22 times.	

No. 3. Sedbury 1734 by Partner.

ran	4-year old	2 times,	won	1 time.	
,,	5 ,,	3 ,,	,,	3 times.	
,,	6 ,,	6 ,,	,,	4 ,,	incl. 3 King's Pl.
,,	7 ,,	6 ,,	,,	6 ,,	incl. 1 King's Pl.
,,	8 ,,	2 ,,	,,	0 ,,	
,,	9 ,,	3 ,,	,,	3 ,,	agst. 5 y. Oronocco
,,	10 ,,	1 ,,	,,	1 ,,	
ran		23 times,	won	18 times.	

No. 4. 1744 Match at Lincoln 14 miles=22,530 m.

Mr. Southcote Parker's 6 year-old horse won with one length in 39 minutes, against Mr. Gilbert Colecut's 21 year-old horse. See "Westminster Journal," the 23/6/1744.

No. 5. Gustavus 1745 by Croft's Forrester.

ran 5 year-old 2 times, won 1 time.
,, 6 ,, 6 ,, ,, 5 times.
,, 7 ,, 3 ,, ,, 3 ,,
,, 8 ,, 3 ,, ,, 3 ,, incl. 1 King's Pl.
,, 9 ,, 4 ,, ,, 4 ,, incl. 1 King's Pl.
,, 10 ,, 1 ,, ,, 1 ,, incl. 1 King's Pl.
,, 11 ,, 2 ,, ,, 2 ,, incl. 1 King's Pl.

ran 24 times, won 22 times.

No. 6. Cabbage 1757 by South.

ran 4 year-old 3 times, won 0 times.
,, 5 ,, 2 ,, ,, 1 ,,
,, 6 ,, 5 ,, ,, 3 ,, Match at Newmarket, 13 st., 5 times R. C.=30,596 m., in 55 minutes, 30 seconds.
,, 7 ,, 1 ,, ,, 0 ,,

ran 11 times, won 4 times.

No. 7. Huncamunca 1759 by Y. Cade.

ran 7 year-old 1 time, won 1 time. King's Pl.
,, 8 ,, 3 times, ,, 2 times incl. 1 King's Pl.
,, 9 ,, 2 ,, ,, 2 ,, 2 King's Pl.
,, 10 ,, 2 ,, ,, 2 ,, incl. 1 King's Pl.
,, 11 ,, 2 ,, ,, 2 ,, 2 King's Pl.

ran 10 times, won 9 times.

No. 8. Gimcrack 1760 by Cripple.

ran 4 year-old 7 times, won 7 times.
,, 5 ,, 6 ,, ,, 5 ,,
,, 6 ,, won in France the bet 22½ miles in one hour.
,, 7 ,, 7 times, won 3 times in Give and Take Pl.
,, 8 ,, 6 ,, ,, 1 ,, 3 times in Give and Take Pl.
,, 9 ,, 5 ,, ,, 1 ,, Newm. R. C.=3 M. 6 Furl. 93 Y. 9 st. against 9 horses of a good class.
,, 10 ,, 3 ,, ,, 1 ,, Newm. B. C.=4 M. 1 Furl. 138 Y., against 8 year-old Pilgrim.
,, 11 ,, 1 ,, ,, 1 ,, Newm. R. C.=3 M. 6 Furl. 93 Y., 9 st., against 8 horses of a good class, amongst which were Bellario 8 year-old, Sportsman 5 year-old, Tetotum 6 year-old.

ran 35 times, won 25 times.

No. 9. Trentham 1766 by Sweepstakes.

ran	4	year-old	6	times,	won	6	times.	
,,	5	,,	3	,,	,,	3	,,	
,,	6	,,	9	,,	,,	9	,,	
,,	7	,,	7	,,	,,	1	,,	
,,	8	,,	4	,,	,,	3	,,	
,,	9	,,	5	,,	,,	2	,,	and twice as second.
,,	10	,,	3	,,	,,	2	,,	incl. Jockey Club Pl. Newm. B. C.= 4 M. 1 Furl. 138 Y. 4 behind.
ran			37	times,	won	26	times.	

No. 10. Mother Brown 1771 by Trunnion.

ran	4	year-old	2	times,	won	0	times.	
,,	5	,,	5	,,	,,	3	,,	
,,	6	,,	7	,,	,,	3	,,	
,,	7	,,	5	,,	,,	2	,,	
,,	8	,,	3	,,	,,	1	,,	was in foal.
,,	9	,,	4	,,	,,	4	,,	incl. 1 King's Pl. after foaling.
,,	10	,,	6	,,	,,	5	,,	incl. 1 King's Pl.
,,	11	,,	6	,,	,,	2	,,	and 4 times as second.
,,	12	,,	1	,,	,,	0	,,	
ran			39	times,	won	20	times,	and had 6 good foals, amongst which at 25 years Jerry Sneak, s. No. 24.

No. 11. Pot8os 1773 by Eclipse.

ran	4	year-old	5	times,	won	0	times,	twice second in big races.
,,	5	,,	7	,,	,,	5	,,	and twice second
,,	6	,,	7	,,	,,	7	,,	
,,	7	,,	11	,,	,,	$8\frac{1}{2}$	,,	and once second.
,,	8	,,	7	.	,,	6	,,	
,,	9	,,	9	,,	,,	6	,,	incl. Craven St. at Newm. and Jockey Club Pl. at Newm., and 3 times second.
,,	10	,,	3	,,	,,	1	,,	at Newm. B. C.=4 M. 1 Furl. 138 Y., against 7 year-old Nottingham.
ran			49	times,	won	$33\frac{1}{2}$	times.	

No. 12. Titania 1774 by Trunnion.

ran	4	year-old	5	times,	won	3	times,	and once second.
,,	5	,,	8	,,	,,	7	,,	and once second.
,,	6	,,	4	,,	,,	1	,,	and 3 times second.
,,	7	,,	2	,,	,,	0	,,	and once second.
,,	8	,,	2	,,	,,	1	,,	
,,	9	,,	2	,,	,,	2	,,	

ran 10 year-old 2 times, won 2 times. King's Pl.
,, 11 ,, 2 ,, ,, 1 ,, 4 miles with heats, 3 behind, incl. one 6 year-old.

ran 27 times, won 17 times.

No. 13. Lalage 1776 by Hero.

ran 4 year-old 7 times, won 6 times, incl. 1 King's Pl. and once second.
,, 5 ,, 6 ,, ,, 5 ,, incl. 1 King's Pl. and once second.
,, 6 ,, 2 ,, ,, 2 ,,
,, 7 ,, without report.
,, 8 ,, 2 times, won 1 time, and once second.
,, 9 ,, 5 ,, ,, 5 times, incl. 1 King's Pl.
,, 10 ,, 7 ,, ,, 5 ,, incl. 1 King's Pl., and twice second in good company. 6 year-old Cherokee beaten twice.
,, 11 ,, 3 ,, ,, 1 ,, King's Pl. and once second.
,, 12 ,, 6 ,, ,, 4 ,, incl. 1 King's Pl. in good company, and once second.

ran 38 times, won 29 times.

No. 14. Quibbler 1780 by Minor.

ran 4 year-old 2 times, won 1 time.
,, 5 ,, 3 ,, ,, 0 ,,
,, 6 ,, 11 ,, ,, 7 ,, incl. 1 King's Pl., 4 Miles, Heats, and Match at Newmarket, 4 st. 7 lbs., 23 Miles (=37 km.) in 57 min., 10 sec.
,, 7 ,, 7 ,, ,, 1 ,, at Newmarket.

ran 23 times, won 9 times.

No. 15. Exciseman 1781 by Sweetbriar.

ran 8 year-old 5 times, won 3 times. } 4 miles with heats, against 4, 5 and
,, 9 ,, 6 ,, ,, 2 ,, } 6 year-olds.
,, 10 ,, 11 ,, ,, 8 ,, Newm. 2 Y.O.C.= Furl. 136 Y. 9 st. 7 agst. 2 3 year-old 7 st. 4 and 7 st. 5
3 4 year-old 7 st. 9—7 st. 11
2 5 year-old 8 st. 2 and 8 st. 9 (Serpent by Eclipse)
1 older 9 st. 7

against 8 horses.
,, 11 ,, 10 ,, ,, 4 ,, on the 12th May, Newm. 2 Y. O. C. - 5 F. 136 Y., 8 st. 4, against 4 year-old Hector, 8 st.
on the 22nd May, Epsom, 4 M., Heats, 3 Heats second and 1 Heat first.

Newm. 2 Y. O. C.=5 Furl. 136 Y. 8 st., against 5 year-old Stallion by Espersykes, 7 st. 8.
Newm. 2 Y. O. C.=5 Furl. 136 Y. 8 st. 12, against 3 year-old Mare by Jupiter, 7 st. 10.

ran 12 year-old 12 times, won 7 times. Newm. 1 Mile, 8 st. 12, against 4 year-old Peggy, 8 st. 4.
Newm. 3 Miles, 8 st. 12
agst. 3 4 y.-o. 7 st. 11—8 st. 4.
2 5 y.-o. 7 st. 11 and 8 st. 13. (Eager D).
On the following day,
2 Y. O. C.=5 Furl. 136 Y., 9 st., against 3 y.-o. 7 st. 2 (Brother to Sir John).
At Warwick, 1 Mile, Heats, against 6, 3 and 4 year-olds and one older.
On the following day,
4 Miles, Heats, 8 st. 9, against 2 6 year-old, 8 st. 7 and 8 st. 12, and 5 times second.

ran 44 times, won 24 times.

No. 16. Mentor 1784 by Justice.

ran	3 year-old	5 times,	won 1 time,	in Derby not placed.
,,	4 ,,	10 ,,	,, 4 times.	
,,	5 ,,	8 ,,	,, 4 ,,	incl. 1 King's Pl.
,,	6 ,,	9 ,,	,, 5 ,,	
,,	7 ,,	9 ,,	,, 3 ,,	
,,	8 ,,	4 ,,	,, 3 ,,	and once second.
,,	9 ,,	6 ,,	,, 4 ,,	and once second.
,,	10 ,,	4 ,,	,, 2 ,,	and twice second.
,,	11 ,,	1 ,,	,, 1 ,,	2½ Miles, 8 st. 7 against 1 3 year-old, 6 st. 1 5 year-old, 8 st. 4. 2 older 8 st. 12.

ran 56 times, won 27 times.

No. 17. Huby 1788 by Phönomenon.

ran	3 year-old	2 times,	won 0 times,	second in the St. Leger.
,,	4 ,,	7 ,,	,, 5 ,,	
,,	5 ,,	5 ,,	,, 3 ,,	
,,	6 ,,	8 ,,	,, 4 ,,	incl. 1 King's Pl

ran	7	year-old	4	times,	won	1	time.	
,,	8	,,	7	,,	,,	3½	,,	in the best company, of 3, 4, 5 and 6 year-olds. Dead heat, 8 st. 3, at Lewes, with the 5 year-old Hermione O., 8 st. 1, which won 5 races in the same year, and twice second.
ran			33	times,	won	16½	times.	

No. 18. St. George 1789 by Highflyer.

ran	3	year-old	5	times,	won	1	time,	in Derby not placed.
,,	4	,,	3	,,	,,	1	,,	
,,	5	,,	6	,,	,,	2	,,	
,,	6	,,	9	,,	,,	3	,,	incl. 1 King's Pl.
,,	7	,,	6	,,	,,	2	,,	
,,	8	,,	8	,,	,,	4	,,	Jockey Club Pl. at Newm. B. C.= 4 M. 1 Furl. 138 Y., 8 st. 11 against 1 4 year-old, 7 st. 2; 1 5 year-old, 8 st. 3; 2 older 8 st. 11; and 3 times second.
,,	9	,,	9	,,	,,	5	,,	against 3, 4 and 5 year-olds, further against 7 year-old Paynator and 8 year-old Aimator and 3 times second.
,,	10	,,	6	,,	,,	1	,,	and once second, 4, 5 and 6 year-olds behind.
ran			52	times,	won	19	times.	

No. 19. Aimator 1790 by Trumpator.

ran	3	year-old	4	times,	won	0	times.	
,,	4	,,	4	,,	,,	3	,,	
,,	5	,,	8	,,	,,	5	,,	
,,	6	,,	6	,,	,,	3	,,	
,,	7	,,	6	,,	,,	3	,,	
,,	8	,,	7	,,	,,	2	,,	Craven St. at Newm. against 6 year-old Spread Eagle D'. and against 9 3, 4 and 5 year-olds and older and twice second.
,,	9	,,	5	,,	,,	0	,,	in big Handicaps.
ran			40	times,	won	16	times.	

No. 20. Gohanna 1790 by Mercury.

ran	3	year-old	8	times,	won	6	times,	second in Derby.
,,	4	,,	12	,,	,,	7	,,	incl. 1 King's Pl.
,,	5	,,	7	,,	,,	4	,,	incl. 2 King's Pl.

ran 6 year-old 5 times, won 3 times, incl. 2 King's Pl.
,, 7 ,, 5 ,, ,, 1 ,,
,, 8 ,, 1 ,, ,, 1 ,, 2½ Miles, at Lewes, 8 st. 7
against 1 4 year-old, 7st. 11
2 6 year-old, 8 st. 2
1 older, 8 st. 7
,, 9 ,, 7 ,, ,, 3 ,, 1 Mile, 9 st.
against 2 4 year-olds, 7 st. 8
1 5 year-old, 8 st. 6
1 6 year-old, 8 st. 6
and twice second.
,, 10 ,, 3 ,, ,, 1 ,, 2½ Miles, at Lewes, 8 st. 7
against 2 5 year-olds, 7 st. 12 and
8 st. 4

ran 48 times, won 26 times.

No. 21. Hambletonian 1792 by King Fergus.

ran 3 year-old 6 times, won 6 times, L. Dcp.
,, 4 ,, 4 ,, ,, 4 ,, Dcp.
,, 5 ,, 7 ,, ,, 7 ,,
,, 6 ,, not
,, 7 ,, 2 times, won 2 times, Donc. St.
,, 8 ,, 1 ,, ,, 1 ,, 4 Miles, at York, 9 st.
against 5 year-old Dion
and 6 year-old Timothy, 8 st. 10,
both first-class racehorses which won
good races in the same year.

ran 20 times, won 20 times.

No. 22. Bobtail 1795 by Precipitate.

ran 3 year-old 3 times, won 2 times, in the Derby not placed.
,, 4 ,, 7 ,, ,, 3 ,,
,, 5 ,, 2 ,, ,, 1 ,,
,, 6 ,, 7 ,, ,, 7 ,,
,, 7 ,, 5 ,, ,, 3 ,,
,, 8 ,, 7 ,, ,, 4 ,, Newm. 2 Y. O. C.=5 Furl. 136 Y.,
8 st. 7, against 5 year-old Muley
Moloch, 8 st. 4
Newm. 1 Mile, 8 st. 4
against 6 year-old Surprise, 8 st.
Newm. Hdc., 1 M. 2 Furl. 44 Y., 9 st.,
agst. 4 y.-o. Northampton, 7 st. 3
5 y.-o. Eleanor D. O., 8 st. 12
5 y.-o. Flambeau, 6 st. 12
6 y.-o. Georgiana, 8 st. 10

ran 9 year-old 7 times, won 4 times. Newm. D. J. = 2 M. 97 Y., 8 st. 10,
agst. 1 3 y.-o. 7 st. 4
6 y.-o. Dick Andrews 9 st. 4
6 y.-o. Surprise 7 st. 13.
Newm. 1 M. 2 Furl. 44 Y., 8 st. 9,
agst. 7 y.-o. Lignum Vitae 8 st.
Newm. 1 M. 2 Furl. 44 Y., 8 st.,
agst. 6 y.-o. Penelope 8 st.

ran 38 times, won 24 times.

No. 23. Eagle 1796 by Volunteer.

ran	year-old	times	won	times	
ran	3 year-old	5 times,	won	3 times,	third in the Derby.
,,	4 ,,	4 ,,	,,	1 ,,	
,,	5 ,,	2 ,,	,,	2 ,,	
,,	6 ,,	2 ,,	,,	1 ,,	
,,	7 ,,	2 ,,	,,	1 ,,	
,,	8 ,,	7 ,,	,,	6 ,,	Newm. 2 Y. O. C., = 5 F. 136 Y., 9 st., agst. 6 y.-o. Eleanor D. O. 7 st. 9
,,	9 ,,	4 ,,	,,	3 ,,	Newm. 1 Mile, 9 st. 7, agst. 4 y.-o. Dreadnought 5 st. 8. Newm. 1 Mile, 9 st. 4, agst. 6 y.-o. Marianne 7 st. 6.
ran		26 times,	won	17 times.	

No. 24. Jerry Sneak 1796 by Chocolate.
(As a racing horse also called Toby and Y. Toby).

ran	year-old	times	won	times	
ran	2 year-old	1 time,	won	0 times,	in October.
,,	3 ,,	7 times,	,,	2 ,,	
,,	4 ,,	6 ,,	,,	4 ,,	incl. 2 King's Pl.
,,	5 ,,	10 ,,	,,	2 ,,	
,,	6 ,,	12 ,,	,,	10 ,,	
,,	7 ,,	22 ,,	,,	16 ,,	incl. 1 King's Pl.
,,	8 ,,	11 ,,	,,	4 ,,	
,,	9 ,,	15 ,,	,,	5 ,,	3 Miles, 9 st. 7, agst. 5 y.-o. 8 st. 10 & 4 y.-o. 7 st. 8, 15 June, at Curragh, 4 Miles with Heats, second to 6 y.-o., Blacklegs, Traveller behind, and won on the same day Match, 4 Miles, 18 st. = 114.3 kg., against a Hunter 18 st., in 9 min. 27 sec. (7 sec. quicker than the Hunter). Covered 1805 56 mares, of which only 3 were barren.
,,	10 ,,	1 ,,	,,	0 ,,	
,,	11 ,,	4 ,,	,,	1 ,,	4 Miles, agst. 6 y.-o. Midas.
,,	12 ,,	not			
,,	13 ,,	10 ,,	,,	2 ,,	4 Miles, agst. 8 y.-o. Midas.
ran		99 times,	won	46 times.	

No. 25. Marcia 1797 by Coriander.

ran	3	year-old	1	time,	won	0	times.	
,,	4	,,						
,,	5	,,	7	times,	won	2	times,	incl. 1 King's Pl.
,,	6	,,	5	,,	,,	4	,,	incl. 2 King's Pl.
,,	7	,,	6	,,	,,	4	,,	
,,	8	,,	5	,,	,,	5	,,	Gold Cup at Newcastle, Gold Cup York, Doncaster St., 4 M., 8 st. 10, agst 3 3 y.-o. 6 st. (amongst which was Sir Paul), and 1 4 y.-o. 7 st. 7.
,,	9	,,	4	,,	,,	4	,,	always against young horses incl. 1 King's Pl., 8 st. 9, agst. 3 y.-o. 6 st. 7 and 4 y.-o. 7 st. 7.
ran			28	times,	won	19	times.	

No. 26. Rumbo 1800 by Whiskey.

ran	2	year-old	2	times,	won	1	time.	
,,	3	,,	5	,,	,,	2	times,	incl. 1 King's Pl.
,,	4	,,	9	,,	,,	5	',,	
,,	5	,,	1	,,	,,	0	,,	
,,	6	,,						
,,	7	,,						
,,	8	,,	5	,,	,,	2	,,	
,,	9	,,	6	,,	,,	2	,,	2½ Miles at Ascot, 9 st., agst. 2 4 y.-o. 7 st. 9 and 4 5 y.-o. 8 st. 5.
,,	10	,,	11	,,	,,	7	,,	Gold Cup at Newm., 1 M. 2 F. 44 Y., 8 st., agst. 1 3 y.-o. 6 st. 11; 7 4 y.-o. 7 st. to 9 st. 7; 3 5 y.-o. 7 st. 12 to 10 st., amongst which many good racers.
,,	11	,,	2	,,	,,	1	,,	2½ Miles at Ascot. Selling race, agst. 2 6 y.-o. and 1 older.
ran			41	times,	won	20	times.	

No. 27. Sir David 1801 by Trumpator.

ran	2	year-old	2	times,	won	1	time.	
,,	3	,,	7	,,	,,	5	times.	
,,	4	,,	9	,,	,,	6	,,	
,,	5	,,	9	,,	,,	9	,,	
,,	6	,,	5	,,	,,	5	,,	
,,	7	,,	4	,,	,,	1	,,	
,,	8	,,	7	,,	,,	3	,,	Newm. 1 M. 2 F. 44 Y., 8 st. 4, agst. 5 y.-o. Eaton 8 st. 8.

	Newm. 2 Y. O. C. = 5 F. 136 Y., 8 st. 10, agst. 4 y.-o. Morel O. 8 st. 2.
ran 9 year-old 2 times, won 1½ times.	Newm. 3 Miles, 8 st. 7, agst. 5 y.-o. Vandyke 8 st.
	Newm. 1 M. 2 F. 44 Y., 8 st. 7, at 7 y.-o. Deceiver 8 st. 4, Dead heat.
ran 45 times, won 31½ times.	

No. 28. Langton 1802 by Precipitate.

ran 3 year-old	4 times,	won 3 times.	
,, 4 ,,	12 ,,	,, 4 ,,	
,, 5 ,,	8 ,,	,, 5 ,,	
,, 6 ,,	6 ,,	,, 4 ,,	
,, 7 ,,	10 ,,	,, 5 ,,	
,, 8 ,,	6 ,,	,, 3 ,,	Oatl. St. at Newm. 2 Miles, 9 st. 11, agst. 9 young horses 3—6 y.-o., and 8 y.-o. Meteora O. 8 st. Gold Cup at Newm. 1 Mile, 9 st. 7, agst. 1 3 y.-o. 5 st. 12 1 4 y.-o. 7 st. 10 4 5 y.-o. 8 st. 5 to 8 st. 10 1 6 y.-o. 9 st. 1 older 8 st. 12, agst. 8 horses. Newm. 1 Mile, 9 st. 6, agst. 6 younger horses, and on the same day a race, 4 Miles, third, 2 behind, started as favourite.
,, 9 ,,	5 ,,	,, 1 ,,	
,, 10 ,,	4 ,,	,, 2 ,,	Newm. 3 Miles, 8 st. 7 agst. 4 y.-o. 7 st. 9 and 5 y.-o. 8 st. 3
ran	55 times,	won 27 times.	

No. 29. Cambric 1807 by Shuttle.

ran 2 year-old	5 times,	won 2 times,	first race, July St. at Newm. against 7 horses. Oct. Newm. 2 Y. O. C. = 5 F. 136 Y., second to Vulture, and on the same day won over 2 Y. O. C. = 5 F. 136 Y.
,, 3 ,,	10 ,,	,, 2 ,,	
,, 4 ,,	18 ,,	,, 13 ,,	3 July at Bath, 2 Miles, agst. 2 3 y.-o. and 2 4 y.-o.

4 July, 2 Miles, Heats,
agst. 1 3 y.-o.,
and immediately afterwards 4 Miles, Heats (3 times),
agst. 2 4 y.-o. and 1 6 y.-o.
16 July at Winchester, 1 Mile,
second, 3 behind.
17 July, 2 Miles, Heats, 8 st. 11,
agst. 1 4 y.-o. 8 st. 8.
6 August, Oxford, 4 Miles,
second, 1 4 y.-o. behind.
8 August, 2 Miles, Heats,
not placed.
5 September, 2 Miles,
agst. 1 3 y.-o., 1 4 y.-o. and 1 older,
and immediately after 3 Miles, Heats, 8 st. 9,
agst. 1 3 y.-o. 6 st. 12.
18 September, 3 Miles, Heats,
agst. 1 4 y.-o. and 1 6 y.-o.
24 September, 4 Miles, Heats,
agst. 1 3 y.-o.
2 October, 3 Miles, Heats,
agst. 1 4 y.-o.

ran 5 year-old 1 time, won 1 time. Oatlands St. at Newm., 2 Miles, agst. 8 good racers.
,, 6 ,, 8 ,, ,, 0 ,,
,, 7 ,, not.
,, 8 ,, 3 ,, ,, 1 ,, 3 Miles, Heats, agst. 1 5 y.-o. and 1 6 y.-o.

ran 45 times, won 19 times.

No. 30. Marksman 1808 by Paynator.

ran 5 year-old 4 times, won 1 time.
,, 6 ,, 3 ,, ,, 1 ,,
,, 7 ,, 5 ,, ,, 3 times.
,, 8 ,, 9 ,, ,, 3 ,, agst. 3, 4, 5 and 6 y.-o.
,, 9 ,, 8 ,, ,, 5 ,, incl. 1 King's Pl. agst. 4 and 6 y.-o.
,, 10 ,, 9 ,, ,, 5 ,, 2—3 Miles. agst. 3, 4, 5 and 6 y.-o.
,, 11 ,, 3 ,, ,, 0 ,,
,, 12 ,, 7 ,, ,, 3 ,, 2—3 Miles, agst. 4 and 5 y.-o.
,, 13 ,, 8 ,, ,, 2 ,, agst. 3, 4 and 5 y.-o.
and 4 times second.

ran	14 year-old	4 times,	won	1 time,		at Basingstoke, 8 st. 10. Selling race agst. 4 3 y.-o. 7 st. 1 to 7 st. 4 1 4 y.-o. 8 st. 3 2 5 y.-o. 8 st. 9 and 8 st. 11 agst. 7 horses.
,,	15 ,,	5 ,,	,,	3 ,,		at Lewes, 9 st. 4, agst. 3 y.-o. 6 st. 11 4 y.-o. 8 st. 2 at Basingstoke, 9 st. 1 agst. 2 3 y.-o. 7 st. 1 1 4 y.-o. 7 st. 12 1 5 y.-o. 8 st. 6 1 6 y.-o. 9 st. 4 1 older 9 st. 1 agst. 6 horses.
,,	16 ,,	5 ,,	,,	3 ,,		2 Selling Races at Lewes. at Canterbury, 2 Miles, with Heats, 9 st. 8, agst. 2 4 y.-o. 8 st. 6
,,	17 ,,	5 ,,	,,	1 ,,		The Town Pl. £50 at Tunbridge Wells, 3 M., with Heats, 9 st. 11, agst. 1 3 y.-o. 7 st. 4 1 5 y.-o. 9 st. 11 and twice second.
,,	18 ,,	3 ,,	,,	1 ,,		The Yeomen's Pl. at Ahford, £50, 2½ Miles, with Heats, agst. 1 3 y.-o. (Honeysuckle by Whalebone) 1 4 y.-o. (Jack Bunce by Y. Gohanna) 1 6 y.-o. (Roderich Randow by Regent) agst. 3 horses, which had won races in the same year, and twice second, last race 14 Sept., at Hastings, the Town Pl., 2 M., with Heats, £50 3 y.-o. Honeysuckle 7 st. 6 . . 1. 18 y.-o. Marksman 9 st. 8 . . . 2. 6 y.-o. Barbary 8 st. 13 . . . . 3.
ran		78 times,	won	32 times.		

No. 31. Cannon-ball 1810 by Sancho.

Record	Performance
ran 3 year-old 2 times, won 2 times.	beat Catton, Langold, Viscount, Wanderer, Skim, and King of Diamonds. (years 3–7)
,, 4 ,, 6 ,, ,, 3 ,,	
,, 5 ,, 10 ,, ,, 8 ,,	
,, 6 ,, 5 ,, ,, 3 ,,	
,, 7 ,, 9 ,, ,, 1 ,,	
,, 8 ,, 8 ,, ,, 4 ,,	Oatl. St. at Newm., 2 Miles, 9 st. 3 agst. 4 4 y.-o. 7 st. 5 to 7 st. 12 1 5 y.-o. 8 st. 6 2 6 y.-o. 8 st. 8 agst. 7 horses (amongst which were the 4 y.-o. Waterloo and 6 y.-o. Anticipation). Jockey Club Pl. at Newm. B. C.= 4 M. 1 F. 138 Y., 8 st. 11 agst. 2 4 y.-o. 7 st. 2 1 5 y.-o. 8 st. 3 agst. 3 good racers. King's Pl. at Newm., agst. 4 y.-o. Waterloo. Hdc. at Newm., 2 Miles, 9 st. 4 agst. 3 3 y.-o. 7 st. 1 4 y.-o. 8 st. 7 agst. 4 horses, and twice second at Newmarket.
,, 9 ,, 8 ,, ,, 3 ,,	Crav. St. at Newm., 1 M. 2 F. 44 Y., 9 st. 7 agst. 7 3 y.-o. 5 st. 10 (incl. Wouvermans). 5 4 y.-o. 8 st. 4 5 y.-o. 8 st. 9 agst. 16 good racers. King's Pl. at Newm. agst. 6 y.-o. Skim and 7 y.-o. Anticipation. Jockey Club Pl. at Newm. B. C.= 4 M. 1 F. 138 Y., 8 st. 11 agst. 2 4 y.-o. 7 st. 2 (Sam. D) and 7 st. 5 (Wouvermans). and twice second at Newmarket.
ran 48 times, won 24 times.	

No. 32. Dr. Syntax 1811 by Paynator.

ran	year-old	times,	won	times.	
ran	3 year-old	8 times,	won	5 times.	
,,	4 ,,	7 ,,	,,	6 ,,	
,,	5 ,,	5 ,,	,,	4 ,,	
,,	6 ,,	4 ,,	,,	2 ,,	
,,	7 ,,	4 ,,	,,	4 ,,	
,,	8 ,,	4 ,,	,,	3 ,,	Gold Cup at Lancaster, 3 M., 8 st. 12 agst. 6 y.-o. Paulowitz 8 st. 12 Gold Cup at Preston, 3 M., 8 st. 12 agst. 3 y.-o. 6 st. 6 once second Gold Cup at Richmond 4 young horses behind.
,,	9 ,,	4 ,,	,,	4 ,,	Gold Cup at Lancaster, 3 M., 8 st. 12 agst. 2 4 y.-o. 8 st. Gold Cup at Preston, 3 M., 8 st. 12 agst. 2 4 y.-o. 8 st. Gold Cup at Richmond, 4 M., 8 st. 10 agst. 3 3 y.-o. 6 st. 10 4 4 y.-o. 8 st. 1 5 y.-o. 8 st. 7 agst. 8 good racers.
,,	10 ,,	4 ,,	,,	3 ,,	Gold Cup at Preston, 3 M., 8 st. 12 agst. 1 4 y.-o. 8 st. and 6 y.-o. Reveller L. 8 st. 12 Gold Cup at Richmond, 4 M., 8 st. 10 agst. 5 y.-o. 8 st. 7 second in the Gold Cup at Lancaster to 6 y.-o. Reveller L.
,,	11 ,,	4 ,,	,,	2 ,,	Gold Cup at Richmond, 4 M., 8 st. 10 agst. 4 y.-o. 8 st. Gold Cup at Northallerston, 4 M., 9 st. 1 agst. 2 3 y.-o. 6 st. 7 and 6 st. 12 1 5 y.-o. 8 st. 12 1 older 9 st. 1 agst. 4 horses, and twice second in the Gold Cup at Preston and in the Gold Cup at Lancaster.
,,	12 ,,	5 ,,	,,	3 ,,	Newcastle, 2 Miles, 9 st. agst. 1 3 y.-o. 6 st. 10 and 1 4 y.-o. 8 st. 3 Gold Cup at Pontefract, 2 M., 9 st. 1 agst. 4 y.-o. 8 st.
ran		49 times,	won	36 times.	

Gold Cup at Richmond, 4 M., 9 st.
agst. 2 3 y.-o. 6 st. 10
1 4 y.-o. 8 st.
1 5 y.-o. 8 st. 9
agst. 4 horses.

In this last race Dr. Syntax fell down immediately after winning, but without damaging itself.

No. 33. Euphrates 1816 by Quiz.

ran 3 year-old 5 times, won 1 time, D. and L. not placed 2, third.
,, 4 ,, 3 ,, ,, 2 times.
,, 5 ,, 11 ,, ,, 8 ,,
,, 6 ,, 9 ,, ,, 4 ,,
,, 7 ,, 9 ,, ,, 2 ,,
,, 8 ,, 8 ,, ,, 3 ,,

Gold Cup at Cheltenham, 3 M., 9 st. 4
agst. 1 4 y.-o. 8 st.
and 2 5 y.-o. 8 st. 11, amongst which were Sharper by Octavius, who won the race in St. Petersburg over 75 versts.

Oxfordshire St., 2 Miles, 8 st. 12
agst. 1 3 y.-o. 6 st. 8
3 4 y.-o. 7 st. 11 to 8 st. 1
1 6 y.-o. 9 st. 3 = Escape
agst. 5 horses.

Gold Cup at Lichfield, 3 M., 8 st. 12
agst. 4 y.-o. 8 st.

,, 9 ,, 13 ,, ,, 6 ,,

Gold Cup at Newton, 3 Miles, 8 st. 12
agst. 1 4 y.-o. 8 st.
3 5 y.-o. 8 st. 8
agst. 4 horses.

Gold Cup at Worcester, 4 M., 9 st. 4
agst. 2 4 y.-o. 8 st.
1 6 y.-o. 9 st. 1
agst. 3 horses.

Cup at Wolverhampton, 3 Miles, 9 st.
agst. 1 4 y.-o. 8 st. 2
2 5 y.-o. 8 st. 10
agst. 3 horses.

Gold Cup at Lichfield, 3 Miles, 8 st. 6
agst. 1 3 y.-o. 6 st. 6
3 4 y.-o. 7 st. 10 to 7 st. 12
agst. 4 horses.

	Gold Cup at Oswestry, 3½ M., 9 st. 2 agst. 4 y.-o. Buttler 8 st. and 5 y.-o. Hesperus 8 st. 9
ran 10 year-old 11 times, won 5 times.	King's Pl. at Chester agst. 5 4 y.-o. Gold Cup at Lichfield, 3 M., 8 st. 12 agst. 4 y.-o. Cain 7 st. 12 and 5 y.-o. Longwaist 8 st. 6 Gold Cup at Oswestry, 3½ M., 9 st. 2 agst. 2 4 y.-o. 8 st.
,, 11 ,, 8 ,, ,, 3 ,,	King's Pl. at Lichfield, 4 M., Heats, agst. 1 4 y.-o. 1 6 y.-o. 1 older agst. 3 horses. Gold Cup at Oswestry, 3 Miles agst. 4 y.-o. Mayfly. Town Pl. at Oswestry, 3½ M., Heats, 9 st. 2 agst. 4 y.-o. Mayfly 7 st. 10 and 5 y.-o. Cymbeline 7 st. 12 and 3 times second in good races with large fields.
,, 12 ,, 10 ,, ,, 5 ,,	King's Pl. at Chester 9 st. 10 agst. 1 4 y.-o. 8 st. 2 and 1 5 y.-o. 9 st. 6 Gold Cup at Ludlow, 3 Miles, 8 st. 12 agst. 3 y.-o. Alcaston 6 st. 6 and 8 y.-o. Hesperus 9 st. Gold Cup at Worcester, 4 M., 9 st. 1 agst. 1 4 y.-o. 8 st. and 1 6 y.-o. 8 st. 12 Gold Cup at Wrexham, 9 st. 7 agst. 1 4 y.-o. 8 st. 5 and 2 5 y.-o 8 st. 9 and 9 st. and twice second.
,, 13 ,, 9 ,, ,, 3 ,,	Gold Cup at Ludlow, 3 Miles, 8 st. 12 agst. 3 y.-o. Melody 6 st. 5 and 5 y.-o. Sampson 8 st. 10 Cup at Wolverhampton, 3 Miles, 9 st. agst. 4 y.-o. Mufti 8 st. 2 and 6 y.-o. Euxton 9 st. King's Pl. at Lichfield, 4 M., Heats, 12 st. agst. 7 y.-o. Alderman 12 st. and 5 times second.
ran 96 times, won 42 times.	

No. 34. Prosody 1818 by Don Cossack.

ran 3 year-old 6 times, won 2 times, at Goodw. 2 Miles, second, and immediately after 2 Miles with Heats, also second.

,, 4 ,, 11 ,, ,, 5 ,, 4 times winner two days one after the other over 1 and 2 Miles with Heats.

,, 5 ,, 18 ,, ,, 10 ,, and 4 times second.
1 July, about 2 Miles with Heats, second,
2 July, 3 Miles, first,
and won the same day
about 2 Miles with Heats, first.
6 August, 2 Miles with Heats, first.
7 August, 2 Miles with Heats, first,
and immediately after
2 Miles with Heats, first.
13 August, 2 Miles with Heats, third,
and on the same day 1 Mile, first.
27 August, 2 Miles with Heats (three times), first.
28 August, 4 Miles with Heats (three times, once dead heat, twice first), first.
17 Sept., 2 Miles with Heats, first.
18 Sept., 2 Miles with Heats, first.

,, 6 ,, 11 ,, ,, 4 ,, and 5 times second.
Won the 3 first races with Heats, then
25 August, 2 Miles, second,
and 2 Miles with Heats, third.
26 August, about 2 Miles with Heats, second,
and immediately after
about 2 Miles with Heats, second.
4 Sept., 2½ Miles with Heats, second.
15 Sept., 2 Miles with Heats (3 times), second.
4 October, 2¼ Miles with Heats, not placed.
5 October, 2¼ Miles with Heats, first.

,, 7 ,, 11 ,, ,, 7½ ,, and once second.
7 July, 4½ Miles with Heats, first.
13 July, 2¼ Miles, second,
and immediately after
1¼ Miles with Heats (3 times), twice dead heat.

3 August, 4 Miles with Heats, first.
25 August, 2 Miles with Heats, first.
7 Sept., about 2 Miles with Heats, first,
and on the same day
about 2 Miles with Heats, first.
15 Sept., $2\frac{1}{4}$ Miles with Heats, first (Gold Cup at Exeter, 4 behind).
16 Sept., about 2 Miles with Heats, first.

ran 8 year-old 13 times, won 8 times, and twice second, always against younger horses.

23 August, 2 Miles, second,
and immediately after
$2\frac{1}{4}$ Miles with Heats, not placed.
24 August, about 2 Miles with Heats (3 times), first against 1 5 y.-o. and 1 4 y.-o. on the same day.
1 Mile with Heats, not placed.
5 Sept., 3 Miles with Heats (3 times), second.
6 Sept., 2 Miles with Heats, first, agst. 1 5 y.-o. and 1 4 y.-o.
12 Sept., 2 Miles with Heats, first.
13 Sept., $2\frac{1}{4}$ Miles with Heats, first, agst. 1 5 y.-o. and 4 y.-o. Conquest.

,, 9 ,, 6 ,, ,, 1 ,,

15 August, $2\frac{1}{4}$ Miles, third.
16 August, $2\frac{1}{4}$ Miles, second.
28 August, $2\frac{1}{4}$ Miles with Heats, first, 9 st. 4 agst. 2 3 y.-o. under 7 st. 1 and 7 st. 7
29 August, $2\frac{1}{4}$ Miles, second.
12 Sept., about 2 Miles, third.
13 Sept., $2\frac{1}{4}$ Miles with Heats, second.

,, 10 ,, 7 ,, ,, 2 ,,

ran 83 times, won $39\frac{1}{2}$ times.

24 July, about 2 Miles with Heats, first, agst. 2 5 y.-o. and 2 4 y.-o.
and on the same day 1 Mile with Heats (4 times, once dead heat, once first), second, 1 5 y.-o. and 2 4 y.-o. behind.
6 August, $2\frac{1}{4}$ Miles, second,
and on the same day about 3 Miles with Heats (3 times), second 1 6 y.-o. and 2 5 y.-o. behind.
21 August, 3 Miles with Heats, first, 8 st. 11

agst. 1 5 y.-o. 8 st. 5, and
1 3 y.-o. 6 st. 7
3 Sept., 2 Miles with Heats, third.
4 Sept., 2 Miles with Heats, second.

Was covered at 11 years old, and had 6 foals, of which several won good races.

No. 35. Hesperus 1820 by Hollyhock.

ran	4 year-old	3 times,	won 0 times.	
,,	5 ,,	12 ,,	,, 6 ,,	
,,	6 ,,	16 ,,	,, 8 ,,	
,,	7 ,,	14 ,,	,, 4 ,,	
,,	8 ,,	9 ,,	,, 2 ,,	agst. 4, 5 and 6 y.-o. horses.
,,	9 ,,	10 ,,	,, 6 ,,	under a high weight against younger horses.
,,	10 ,,	13 ,,	,, 7 ,,	City Pl. at Chester, 9 st. 2 agst. 4 y.-o. Grimbald 8 st. Gift of Earl Grosvenor at Chester, 2 Miles, 9 st. 2 agst. 2 5 y.-o. 8 st. 12 Gloucestershire St. at Cheltenham, 8 st. 7 agst. 5 4 y.-o. 7 to 8 st. and 3 5 y.-o. 7 st. to 8 st. 8 agst. 8 horses. Gold Cup at Worcester, 4 Miles, 9 st. 2 agst. 3 4 y.-o. 7 st. 12 to 8 st. 2 Handicap at Wrexham, 2 Miles, Heats, 9 st. 5 agst. 3 3 y.-o. 7 st. to 7 st. 3 1 4 y.-o. 8 st. 6 1 6 y.-o. 8 st. 12 agst. 5 horses, and 6 times second in good races.
ran		77 times,	won 33 times.	

No. 36. Liston 1821 by Ambo.

ran	3 year-old	1 time,	won 0 times.	
,,	4 ,,	4 times,	won 3 ,,	
,,	5 ,,	8 ,,	,, 5 ,,	
,,	6 ,,	14 ,,	,, 9 ,,	
,,	7 ,,	16 ,,	,, 10 ,,	
,,	8 ,,	11 ,,	,, 5 ,,	Oxfordshire St., 2 Miles, 9 st. 5 agst. 2 3 y.-o. 6 st. 5 and 6 st. 12 and 2 4 y.-o. 7 st. 7 and 8 st. 2 agst. 4 horses.

	Gold Cup at Warwick, 4 Miles, 9 st. 5 agst. 3 4 y.-o. 8 st. 3 Cup at Abingdon, 3 Miles, 9 st. 2 agst. 6 y.-o. Jocko 9 st. and 3 times second.
ran 9 year-old 6 times, won 3 times.	Selling Race at Abingdon, 3 Miles, 9 st. 2 agst. 3 4 y.-o. 8 st. and 2 5 y.-o. 8 st. 9 agst. 5 horses, and once second.
,, 10 ,, 7 ,, ,, 3 ,,	Cup at Newport, 3 Miles, 8 st. 13 agst. 4 y.-o. Paradox 8 st. 7 Selling Race at Abingdon, 2 Miles, agst. 1 3 y.-o. and 3 4 y.-o., and 3 times second.
,, 11 ,, 12 ,, ,, 6 ,,	Won 3 Selling Races, over 2 Miles, agst. 3 6 y.-o. horses. Salperton St. at Cheltenham, 2 Miles, 9 st. 7 agst. 1 3 y.-o. 7 st. and 1 4 y.-o. 8 st. 7 and on the same day Cup, 3 Miles, 9 st. 1 agst. 5 y.-o. Thorngrove 8 st. 11
,, 12 ,, 8 ,, ,, 5 ,,	Handicap at Bath, 1½ Miles, 8 st. 10 agst. 3 5 y.-o. 7 st. 10 to 8 st. 1 (Sinbad) and 2 6 y.-o. 8 st. 2 and 9 st. 2 (Bryan) agst. 5 horses. 2 Selling Races, 1¼ and 2 Miles, agst. young horses. Beaufort St. at Gloucester, about 2 Miles, Heats, agst. 1 3 y.-o. and 1 6 y.-o., and on the following day City Member's Pl., 2 Miles, Heats, agst. 6 y.-o. Harry.
,, 13 ,, 7 ,, ,, 1 ,,	Selling Race at Bath, 3 Miles, 9 st. 2 agst. 4 y.-o. 7 st. 13 and second in Gold Cup at Newport.
,, 14 ,, 2 ,, ,, 0 ,,	
ran 96 times, won 50 times.	

No. 37. Fleur de Lis 1822 by Bourbon.

ran	3 year-old	4 times,	won 3 times,	L. not placed.
,,	4 ,,	7 ,,	,, 7 ,,	Dcp.
,,	5 ,,	6 ,,	,, 4 ,,	
,,	6 ,,	5 ,,	,, 3 ,,	
,,	7 ,,	6 ,,	,, 4 ,,	Gold Cup at Goodw., 9 st. 3 agst. 5 y.-o. Mameluke D. 9 st. 3 and 4 others.
,,	8 ,,	2 ,,	,, 1 ,,	Gold Cup at Goodw., 9 st. 9 agst. 8 horses, amongst which were 5 y.-o. The Colonel L. 10 st.
,,	9 ,,	1 ,,	,, 0 ,,	second in the Gold Cup at Goodw., 9 st. 11 agst. 4 y.-o. Priam D. 9 st. 5 behind 4 y.-o. Variation 8 st. 11 which had won 4 good races in the same year.
ran		31 times,	won 22 times.	

No. 38. Conquest 1822 by Waterloo.

ran	3 year-old	3 times,	won 2 times.
,,	4 ,,	11 ,,	,, 7 ,,
,,	5 ,,	19 ,,	,, 12 ,,
ran		33 times,	won 21 times.

Altogether Races with Heats, 2—2½ Miles.

ran and won on August 9 at Salisbury in 3 races, one after the other without a pause, with fresh opponents, viz.:—

1. Sweepstakes, 2 Miles, 8 st. 7
2. The City Member's Pl., 2 Miles with Heats.
3. The City Bowl, 2½ Miles with Heats.

Ran on the 16th August at Blandford the following 3 races:

1. Dorsetshire St., 2 Miles, not placed.
2. Selling Races, 2¼ Miles, won, and immediately after
3. Member's Pl., 2¼ Miles, second.

Won on the 23rd August at Taunton, 2¼ Miles with Heats, against 3 good racehorses.

Won on the 24th August in the Town Pl., 2¼ Miles with Heats.

Won on the 28th August in Bridgwater Ladies' Pl., 2¼ Miles with Heats,

and on the 29th August at the same place Member's Pl., 2¼ Miles with Heats (3 times),
and on the 12th Sept. at Exeter Member's Pl., 2½ Miles with Heats.
Ran on the 13th Sept. at the same place Handicap Pl., 2¼ Miles with Heats, not placed,
and was victorious immediately afterwards in the City Member's Pl., 2¼ Miles with Heats.
Ran on the 26th Sept. at Dorchester Tradesmen's Pl., about 2 Miles with Heats, not placed,
and won on the same day in the Ladies' Pl., about 2 Miles with Heats (3 times), against 4 good racehorses,
and ran on the following day at the same place Yeoman's Pl., 2 Miles with Heats, against 3 good racehorses, won the first Heat, but fell in the second Heat, injuring itself inwardly, and had to be killed.

No. 39. Tranby 1826 by Blacklock.

November 1831. The famous bet of Mr. Osbaldiston to ride 200 miles in 10 hours, any number of horses. Won in 8 hours, 42 minutes, with 29 horses, amongst which was the 5 year-old Tranby by Blacklock, which had to go four times, 4 miles each time, with about one hour's pause each time. Tranby took for the:—

1st 4 Miles	8 Minutes,	10	Seconds.
2nd 4 Miles	8 ,,	—	,,
3rd 4 Miles	8 ,,	15	,,
4th 4 Miles	8 ,,	50	,,

In the next year Tranby ran and won twice at Newmarket in a well contested race, then became Sire of "I am not aware," who won races 2—9 year-old, and was then sold to America, where he got renowned as sire of Vandal's dam.

No. 40. Catherina 1830 by Whisker.

ran	2 year-old	2 times,	won	0 times,	twice second.
,,	3 ,,	10 ,,	,,	1 ,,	O. not placed, L. second.
,,	4 ,,	17 ,,	,,	10 ,,	
,,	5 ,,	19 ,,	,,	11 ,,	
,,	6 ,,	20 ,,	,,	11 ,,	incl. twice King's Pl.

ran 7 year-old 18 times, won 6 times, incl. once King's Pl.

,, 8 ,, 12 ,, ,, 5 ,, The Tradesmen's Cup at Manchester, 2¼ Miles, 8 st. 7
agst. 2 4 y.-o. 7 st. and 7 st. 12
1 5 y.-o. 7 st.
1 older 8 st. 5

agst. 4 horses.
1 King's Pl. agst. 2 4 y.-o.
and 4 times second.

,, 9 ,, 25 ,, ,, 10 ,, The Tradesmen's Cup at Burnley, 2½ Miles, 8 st. 11
agst. 3 4 y.-o. 8 st. 2
1 older 9 st.

agst. 4 horses.

,, 10 ,, 25 ,, ,, 12 ,, Ladies' Purse at Chester, about 2 Miles with Heats
agst. 3 3 y.-o.
1 4 y.-o.
1 5 y.-o.

agst. 5 horses.
Lancashire St. at Burnley, about 3 Miles, Heats
agst. 4 y.-o. The Shadow and 5 y.-o. St. Leonard
and immediately after
A free Pl., about 3 Miles, Heats
agst. 2 4 y.-o. and 1 5 y.-o.
Sweepst. at Chesterfield, 2 Miles
agst. 1 4 y.-o. and 1 5 y.-o.
and on the following day
Sweepst., about 2 Miles
agst. 1 3 y.-o. and 1 4 y.-o.
and immediately after
The Town Pl., 2 Miles, Heats (3 times)
agst. 2 3 y.-o.
1 4 y.-o.
1 5 y.-o.

agst. 4 horses.
The Tally-ho St. at Welshpool, 2 Miles, Heats (3 times), 11 st. 5
agst. 1 3 y.-o. 8 st. 7
2 4 y.-o. 9 st. 5
1 5 y.-o. 10 st. 10
1 older 11 st. 5

agst. 5 horses,

and on the following day
The Innkeeper's Purse, 1½ Miles, Heats (3 times)
agst. 1 3 y.-o. and 2 5 y.-o.

ran 11 year-old 28 times, won 12 times. The All-aged St. at Tenbury, 2 Miles, Heats (4 times), 8 st. 11
agst. 2 5 y.-o. 8 st. 7 and 8 st. 10
3 older 8 st. 11 to 9 st. 3

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agst. 5 horses.
Sweepst. at Bridgnorth, about 2 Miles, Heats (3 times)
agst. 1 4 y.-o., 1 5 y.-o. and 1 older,
and on the following day
A Gold Cup, about 2 Miles
agst. 1 4 y.-o., 1 5 y.-o. and 1 older.
On the 30th August second in Race over 1¼ Miles with Heats.
On the following day third in a Race over 2 Miles, and on the same day second in a Race over 1¼ Miles with Heats.
On the 28th Sept. second in a Race over about 3 Miles,
and immediately after winner in
Pottery St., about 2 Miles, Heats
agst. 2 4 y.-o.,
and on the following day winner in
Town St., about 2 Miles
agst. 2 3 y.-o.
On the 6th October Sweepst. at Knutsford, 2 Miles
agst. 1 4 y.-o.,
immediately after not placed in Race over 2¼ Miles,
and on the following day second, 1½ Miles with Heats (3 times), 3 behind.
On the 11th October third in a Race over 2 Miles with Heats,
and on the same day
Tally-ho St. at Welshpool, 2 Miles, Heats, 11 st. 5
agst. 4 y.-o. Hautboy 9 st. 11
and on the following day
Innkeeper's Purse, 1½ Miles, Heats (4 times), 9 st. 8

agst. 1 3 y.-o. 7 st. 3
2 older 9 st. 8 and 9 st. 13
(amongst them Kitty Cockle)
18th October Moorland St. at Leek, about 2 Miles, Heats (3 times)
agst. 2 3 y.-o. and 1 older.

ran 176 times, won 81 times, and had 9 good foals.

No. 41. Isaac 1831 by Figaro.

ran	3 year-old	2 times,	won	1 time.		
,,	4 ,,	3 ,,	,,	2 times.		
,,	5 ,,	8 ,,	,,	1 time,	King's Pl.	
,,	6 ,,	14 ,,	,,	9 times.		
,,	7 ,,	16 ,,	,,	10 ,,		
,,	8 ,,	23 ,,	,,	18 ,,		

Handicap at Coventry, 1½ Miles, 9 st.
agst. 1 3 y.-o. 6 st. 4
1 4 y.-o. 7 st. 4
2 5 y.-o. 8 st. and 8 st. 6

agst. 4 horses.
Handicap at Bath, 1 Mile, Heats, 8 st. 12
agst. 2 3 y.-o. 6 st. 4 and 6 st. 12
2 4 y.-o. 7 st. 6 and 7 st. 10
1 5 y.-o. 9 st. 2
1 older 8 st. 1

agst. 6 horses.
Worcestershire St., 2 Miles, 8 st. 10
agst. 1 3 y.-o. 6 st. 4
1 4 y.-o. 7 st. 10
and on the same day
City Member's Pl., 2 Miles, Heats, 9 st. 6
agst. 1 3 y.-o. 6 st. 10
2 older 9 st. 4
and on the following day
Gold Cup, 3 Miles, 9 st. 4
agst. 5 y.-o. Modesty 8 st. 13.
Oxfordshire St., 2 Miles, 8 st. 3
agst. 1 5 y.-o. 9 st. 11 (Caravan)
1 6 y.-o. 9 st. 2
1 older 6 st. 9

agst. 3 horses,
and on the following day
Cup, 2¼ Miles, 9 st.
agst. 1 5 y.-o. 9 st. 11
3 6 y.-o. 9 st. to 9 st. 5

agst. 4 horses.

Leamington St. at Warwick, 2 Miles, 8 st. 3
agst. 2 4 y.-o. 6 st. 7 and 7 st. 7
1 5 y.-o. 7 st. 13
2 6 y.-o. 8 st. 5 and 8 st. 10 (King Cole)

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agst. 5 horses.
On the following day second in the Warwick Cup, over 4 Miles, 5 y.-o. Caravan behind.
On the following day
Stand St., 2 Miles, 8 st. 10
agst. 2 3 y.-o. 6 st. and 6 st. 5,
and immediately after third in King's Pl., 2 Miles, Heats.
King's Pl. at Leicester
agst. 1 3 y.-o. and 1 4 y.-o.,
and on the following day
Gold Cup, about 3 Miles, 9 st. 4
agst. 1 3 y.-o. and 1 5 y.-o. 6 st. 7 and 9 st. 1.
Gold Cup at Shrewsbury, 3 Miles
agst. 5 y.-o. Caravan,
and on the following day
King's Pl., 3 Miles
agst. 1 3 y.-o. and 2 5 y.-o.
Cup at Oswestry, 1½ Miles, not placed, 5 starters.
Immediately after
w. o., 1½ Miles
and
Member's St., 1½ Miles, Heats (3 times), 8 st. 13
agst. 1 3 y.-o. 7 st.
and 1 4 y.-o. 7 st. 11

ran 9 year-old 15 times, won 5 times. Worcestershire St., 2 Miles, 9 st. 5
agst. 2 4 y.-o. 7 st. 4 and 7 st. 10
Cup at Oxford, 2¼ Miles, 9 st.
agst. 2 4 y.-o. 7 st. 13 and 8 st. 2
1 6 y.-o. 9 st. 5 (Caravan)

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agst. 3 horses.
16th Sept. at Shrewsbury, 2 Miles, not placed.
17th Sept. second Gold Cup, 3 Miles.
18th Sept. King's Pl., 3 Miles
agst. 5 good horses,

and on the same day second in Member's Pl., about 2½ Miles, Heats.
Gold Cup at Wrexham, about 3 Miles, 9 st. 1
agst. 1 3 y.-o. 7 st.
1 4 y.-o. 8 st. 1
1 6 y.-o. 9 st.

agst. 3 horses.
Handicap at Newm., 2 Miles, 9 st. 1
agst. 4 3 y.-o. 5 st. 3 to 6 st. 9
4 4 y.-o. 6 st. 7 to 8 st. 5
2 5 y.-o. 7 st. 7 and 8 st.
1 older 8 st. 7

agst. 11 horses.
In the Cesarew., 8 st. 5, not placed.

ran 10 year-old 13 times, won 1 time. Handicap at Warwick, 2 Miles, 9 st. 4
agst. 6 4 y.-o. 6 st. 12 to 8 st. 4
3 5 y.-o. 7 st. 8 to 8 st. 10
1 older 7 st. 7

agst. 10 horses.
On the same day in Handicap second.
Ran further in many big Handicaps.

,, 11 ,, 5 ,, ,, 2 ,, in small and large Handicaps, and twice second in King's Pl.
,, 12 ,, 4 ,, ,, 2 ,,
,, 13 ,, 3 ,, ,, 1 ,,
,, 14 ,, 4 ,, ,, 2 ,, } in Hurdle and Hunter Races.
,, 15 ,, 1 ,, ,, 0 ,, }

ran 111 times, won 54 times.

No. 42. Zohrab 1831 by Lottery.

ran 3 year-old 6 times, won 3 times.
,, 4 ,, 8 ,, ,, 4 ,, 1 King's Pl.
,, 5 ,, 6 ,, ,, 3 ,,
,, 6 ,, 10 ,, ,, 3 ,,
,, 7 ,, 7 ,, ,, 4 ,,
,, 8 ,, 17 ,, ,, 11 ,, Victoria St. at Cheltenham, 2 Miles, 9 st. 7
agst. 1 3 y.-o. 6 st. 12
and 2 5 y.-o. 7 st. 12 and 9 st. 2
Ladies' Pl. at Kelso, 2½ Miles, 9 st. 2
agst. 1 3 y.-o. 7 st. 7
1 4 y.-o. 7 st. 7
1 5 y.-o. 7 st. 8
1 6 y.-o. 8 st. 3

agst. 4 horses,

often ran and won twice on the same day.

ran 9 year-old 11 times, won 2 times. Gold Cup in Eglinton Park, 2½ Miles, 12 st. 4
agst. 2 6 y.-o. 12 st. 4 (Cardinal Puff)
1 older 12 st. 4
often ran twice on the same day.

,, 10 ,, 18 ,, ,, 6 ,, often won twice on the same day, mostly in Races with Heats.
last Race at Kelso, 1½ Miles, 9 st. 9
agst. 2 4 y.-o. 7 st. 13
1 5 y.-o. 9 st. 6
1 older 9 st. 3
agst. 4 horses.

ran 83 times, won 36 times.

No. 43. The Potentate 1832 by Langar.

ran 2 year-old 3 times, won 0 times.
,, 3 ,, 7 ,, ,, 1 ,, and twice second (Derby at York and St. Leger at Liverpool).
,, 4 ,, 2 ,, ,, 1 ,,
,, 5 ,, 11 ,, ,, 1 ,,
,, 6 ,, 19 ,, ,, 11 ,, incl. twice King's Pl.
,, 7 ,, 23 ,, ,, 15 ,, incl. 3 times King's Pl.
,, 8 ,, 13 ,, ,, 4 ,, Goodwood Cup, against 19 horses of a good class (of which were Epirus, Euclid, Retriever, Verulam).
,, 9 ,, 13 ,, ,, 3 ,, mostly in big, well contested Races.
The Glasgow Cup at Paisley, 2 Miles, 8 st. 8
agst. 5 y.-o. Rejected 7 st. 12
last Race, A free Handicap, 1 Mile, Heats (3 times), 8 st. 9
agst. 2 6 y.-o. 7 st. 3 and 9 st. 2

ran 91 times, won 39 times.

No. 44. Bee's Wing 1833 by Dr. Syntax.

ran 2 year-old 3 times, won 2 times.
,, 3 ,, 5 ,, ,, 2 ,, L. not placed.
,, 4 ,, 8 ,, ,, 6 ,, incl. 1 King's Pl.
,, 5 ,, 9 ,, ,, 7 ,, incl. 1 King's Pl.
,, 6 ,, 12 ,, ,, 11 ,, incl. 3 King's Pl.
,, 7 ,, 12 ,, ,, 10 ,, incl. 1 King's Pl.

ran 8 year-old 10 times, won 9 times. Trial St. at Chester
agst. 2 3 y.-o.
1 5 y.-o.
1 older.

agst. 4 horses.
Gold Cup at Newcastle, 2 Miles, 9 st. 3
agst. 4-y.-o. Calypso 8 st. 5
and 6 y.-o. Lanercost Acp. 9 st. 3
Gold Cup at Stockton, 9 st. 8
agst. 1 3 y.-o. 6 st. 11
1 4 y.-o. 7 st. 7
1 5 y.-o. 9 st. 5

agst. 3 horses.
Cup at Doncaster
agst. 5 y.-o. Shadow.

,, 9 ,, 5 ,, ,, 4 ,, Gold Cup at Ascot, 2½ Miles
agst. 2 4 y.-o.
and 2 older (of which were Lanercost Acp.)

agst. 4 horses.
Gold Cup at Newcastle, 2 Miles
agst. 6 y.-o. Charles XII. L.
Gold Cup at Doncaster
agst. 3 y.-o. Attila
6 y.-o. Charles XII. L.
and 6 y.-o. Shadow

agst. 3 horses.

ran 64 times, won 51 times.

No. 45. Adrian 1834 by Sultan.

ran	year-old	times	won	times	
ran	2 year-old	10 times,	won	1 time.	
,,	4 ,,	9 ,,	,,	0 ,,	
,,	5 ,,	12 ,,	,,	1 ,,	
,,	6 ,,	3 ,,	,,	0 ,,	
,,	7 ,,	14 ,,	,,	5 times.	Ran chiefly in Races over 1½ to 2½ Miles with Heats, and beat many younger horses, often in Selling Races.
,,	8 ,,	18 ,,	,,	8 ,,	
,,	9 ,,	20 ,,	,,	4 ,,	
,,	10 ,,	14 ,,	,,	2 ,,	
,,	11 ,,	7 ,,	,,	2 ,,	
,,	12 ,,	4 ,,	,,	3 ,,	also in Hurdle Races.
,,	13 ,,	3 ,,	,,	2 ,,	
ran		114 times,	won	28 times.	

No. 46. The Shadow 1836 by The Saddler.

ran 2 year-old 4 times, won 2 times.
,, 3 ,, 4 ,, ,, 2 ,, O. not placed.
,, 4 ,, 10 ,, ,, 7 ,,
,, 5 ,, 19 ,, ,, 13 ,, incl. twice King's Pl.
,, 6 ,, 21 ,, ,, 11 ,, incl. 3 times King's Pl.
,, 7 ,, 17 ,, ,, 12 ,, incl. once King's Pl.
,, 8 ,, 10 ,, ,, 6 ,, Gold Cup at Western Meeting, 2 M., 8 st. 13
agst. 1 3 y.-o. 7 st. 5
and 1 4 y.-o. 8 st. 5
and on the following day
A Plate for all ages, 2 Miles, Heats.
A Plate of £50 at Perth, 2 Miles, Heats
agst. 1 4 y.-o. and 1 5 y.-o.
and on the same day
Member's Pl., about 2 Miles, 10 st. 2
agst. 4 y.-o. Armytage 9 st. 9
,, 9 ,, 18 ,, ,, 9 ,, Cleveland Cup at Wolverhampton, 3 Miles, 9 st.
agst. 1 3 y.-o. Coer de Lion 7 st. 2
1 4 y.-o. 7 st. 6
1 5 y.-o. 9 st. 7
1 6 y.-o. 9 st. 11

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agst. 4 horses.
King's Pl. at York, 2 Miles
agst. 3 3 y. o.
and 2 5 y.-o.

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agst. 5 horses.
Member's Pl. at York, 1½ Miles, Heats, 9 st. 2
agst. 2 3 y.-o. 6 st. 7 and 7 st. 10
King's Pl. at Leicester
agst. 1 3 y.-o.
King's Pl. at Doncaster
agst. 1 3 y.-o.
A Plate at Dumfries, 2 Miles
agst. 2 3 y.-o.
A Plate of £50 at Perth, 2 Miles, Heats
agst. 1 3 y.-o. and 1 4 y.-o.,
and on the same day
Member's Pl., about 2 Miles
agst. 2 3 y.-o.

ran	10	year-old	7	times, won	1	time.	Handicap at Aberdeen, 1½ Miles, 9 st. 5 agst. 1 6 y.-o. 8 st. 1 and 1 older 8 st. 4
,,	11	,,	3	,, ,,	1	,,	Welter St., Gentleman Rider, 1 Mile agst. 3 older.
ran			113	times, won	64	times.	

No. 47. St. Lawrence 1837 by Skylark or Lapwing.

ran	2	year-old	6	times, won	2	times.	
,,	3	,,	6	,, ,,	2	,,	
,,	4	,,	16	,, ,,	9	,,	
,,	5	,,	4	,, ,,	1	,,	
,,	6	,,	17	,, ,,	13	,,	incl. 5 times King's Pl.
,,	7	,,	5	,, ,,	1	,,	
,,	8	,,	4	,, ,,	0	,,	in the best company.
,,	9	,,	2	,, ,,	0	,,	
,,	10	,,	2	,, ,,	1	,,	Tradesmen Pl. Handicap at Chester, 7 st. 10 agst. 29 horses of a good class, amongst which were: Mendicant 4 y.-o. 8 st. (second), Newcourta 7 st. 10 (third), Annandale 5 y.-o. 7 st. 13. In the Cesarew. 8 st. 2, not placed.
ran			62	times, won	29	times.	

No. 48. Lady Flora 1838 by Hampton.

ran	3	year-old	4	times, won	2	times.	
,,	4	,,	15	,, ,,	7	,,	
,,	5	,,	8	,, ,,	0	,,	
,,	6	,,	24	,, ,,	12	,,	
,,	7	,,	24	,, ,,	12	,,	} Almost all in Races with Heats 1½ to 3 Miles, against younger horses.
,,	8	,,	19	,, ,,	6	,,	}
,,	9	,,	16	,, ,,	5	,,	}
,,	10	,,	14	,, ,,	5	,,	}
,,	11	,,	8	,, ,,	2	,,	Also ran in Hurdle Races.
ran			132	times, won	51	times.	

No. 49. The Sailor (later Gaffer Green) 1839 by Obadiah.
(Not in Stud Book, a Thoroughbred nevertheless).

ran	6	year-old	6	times, won	4	times.
,,	7	,,	11	,, ,,	4	,,
,,	8	,,	24	,, ,,	7	,,

ran 9 year-old 15 times, won 4 times, and 5 times second.

Chester Handicap, ¾ Mile, 5 st. 12
agst. 3 3 y.-o. 4 st. 12 to 5 st. 3
7 4 y.-o. 5 st. 11 to 6 st. 13
1 older 7 st. 8

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agst. 11 horses.

Shrewsbury Handicap, 1½ Miles, 6 st. 12
agst. 1 5 y.-o. 7 st. 6
3 6 y.-o. 7 st. 2 to 7 st. 12
1 older 8 st. 10

---

agst. 5 horses,

and on the same day

Handicap, about 1 Mile with Heats, 5 st. 7
agst. 1 4 y.-o. 5 st. 4
2 5 y. o. 5 st. 6 and 5 st. 7
1 older 5 st. 7

---

agst. 4 horses.

,, 10 ,, 15 ,, ,, 4 ,,

Chester Grand Stand Cup, about 1½ Miles, 8 st. 2
agst. 5 3 y.-o. 4 st. 12 to 6 st. 10
2 4 y.-o. 6 st. 11 and 7 st. 10
2 5 y.-o. 7 st. 6 and 8 st. 2
1 6 y.-o. 8 st. 10
1 older 8 st. 6

---

agst. 11 horses.

Shrewsbury Sev. St., 1 Mile with Heats, 7 st. 7
agst. 2 5 y.-o. 5 st. 11 and 6 st.

Newport Handicap, 1 Mile, 8 st. 7
agst. 2 3 y.-o. 6 st. 6
1 5 y.-o. 7 st. 13

---

agst. 3 horses.

Leominster Volka St., 1½ Miles with Heats (4 times), 8 st. 12
agst. 4 4 y.-o. 6 st. 10 to 7 st. 10
1 6 y.-o. 7 st. 13

---

agst. 5 horses.

,, 11 ,, 20 ,, ,, 1 ,,

Ran in good Races and in good company.

Wrexham Handicap, 1¼ Miles with Heats (4 times), 7 st. 9

agst. 1 3 y.-o. 7 st.
3 4 y.-o. 6 st. 13 to 7 st. 11
2 6 y.-o. 8 st. 1 and 8 st. 7

agst. 6 horses.

ran 12 year-old 10 times, won 0 times. Ran in good Races and in good company.
,, 13 ,, not run.
,, 14 ,, 8 ,, ,, 1 ,, in several big Handicaps in good company.
Walsall Member's St., about 1½ M. with Heats (4 times), 8 st. 11
agst. 1 3 y.-o. 7 st. 1
and 2 4 y.-o. 7 st. 13

ran 109 times, won 25 times.

No. 50. Inheritress (Foundation Mare of Veilchen) 1840 by The Saddler.

ran 2 year-old 4 times, won 1 time.
,, 3 ,, 2 ,, ,, 0 ,,
,, 4 ,, 10 ,, ,, 4 times.
,, 5 ,, 24 ,, ,, 14 ,, incl. 4 King's Pl., 2 Miles, Heats.
,, 6 ,, 17 ,, ,, 7 ,, incl. 2 King's Pl., 2 Miles, Heats.
,, 7 ,, 15 ,, ,, 9 ,, incl. 3 King's Pl., 2 Miles, Heats, and 3 Miles.
Liverpool Cup, 2 Miles
agst. 16 horses.
,, 8 ,, 18 ,, ,, 11 ,, second in the Gr. Metrop. St. at Epsom, 22 horses behind.
The Cheshire St. at Chester, 1 Mile 3 Furl., 8 st. 9
agst. 1 3 y.-o. 5 st. 2
1 4 y.-o. 7 st. 2 (The Swallow)
1 5 y.-o. 8 st. 10 (Pyrrhus I D.)
1 older 7 st.

agst. 4 horses.
Handicap at Nottingham, 2 Miles, 8 st. 9
agst. 2 3 y.-o. 5 st. 4 and 5 st. 7
1 4 y.-o. 6 st. 9
1 older 7 st. 11 (Yardley)

agst. 4 horses,
and on the following day
The Chesterfield Handicap, 1½ Miles, 8 st. 10
agst. 2 3 y.-o. 4 st. 12 and 5 st. 6

and on the same day
King's Pl., 2 Miles, Heats, 10 st.
agst. 1 3 y.-o. 8 st. 2
1 4 y.-o. 9 st. 4
1 6 y.-o. 10 st.

---

agst. 3 horses.
Second in the Wolverhampton St., $2\frac{1}{2}$ Miles, 3 behind,
and on the following day
The Cleveland Cup at Wolverhampton, 3 Miles, 9 st. 6
agst. 1 3 y.-o. 6 st. 5
1 4 y.-o. 8 st. 2
Dundas St. at York, $1\frac{1}{4}$ Miles, 9 st.
agst. 3 3 y.-o. 6 st. 8
1 4 y.-o. 8 st. 2

---

agst. 4 horses.
Caledonian Handicap, 2 Miles, 8 st. 13
agst. 2 3 y.-o. 5 st. 11 and 6 st. 2
1 6 y.-o. 8 st. (Plaudit)

---

agst. 3 horses.
Richmond Handicap, 2 Miles, 9 st. 5
agst. 4 3 y.-o. 5 st. 12 to 6 st. 4
1 4 y.-o. 6 st. 4
1 older 7 st. 13

---

agst. 6 horses.
twice King's Pl.
Cesarew. 8 st. 8, not placed.

ran 9 year-old 9 times, won 1 time. Handicap at Nottingham, $1\frac{1}{2}$ Miles, 8 st. 7
agst. 1 4 y.-o. 7 st.
4 times second and
in 3 big Handicaps not placed.

,, 10 ,, 5 ,, ,, 1 ,, Handicap at Wolverhampton, $1\frac{1}{2}$ M., 7 st. 5
agst. 1 3 y.-o. 5 st. 6
and 1 6 y.-o. 6 st. 4
and in 4 big Handicaps not placed.

---

ran 104 times, won 48 times.

No. 51. Dulcet 1842 by Dulcimer.

ran 3 year-old 6 times, won 1 time.
,, 4 ,, 19 ,, ,, $12\frac{1}{2}$ times.
,, 5 ,, 3 ,, ,, 1 ,,
,, 6 ,, 2 ,, ,, 0 ,,

ran 7 year-old 5 times, won 0 times.

,, 8 ,, 7 ,, ,, 4 ,, Handicap Newm. 2 Y. O. C.=5 Furl. 136 Yds., 7 st. 8
agst. 4 3 y.-o. 6 st. 4 to 7 st. 7
1 4 y.-o. 8 st. 5
1 6 y.-o. 8 st. 9

agst. 6 horses.

,, 9 ,, 7 ,, ,, 1 ,, Cobham Pl. Handicap at Epsom, ¾ Mile, 7 st. 7
agst. 2 3 y.-o. 5 st. 12 and 6 st. 12
2 4 y.-o. 7 st. 9 and 8 st.
2 5 y.-o. 7 st. 7
1 6 y.-o. 7 st. 10

agst. 7 horses
twice second in big Handicaps.
Cesarew. and Cambr. not placed.

,, 10 ,, 8 ,, ,, 2 ,, Berkshire St. at Reading, 2 Miles, 6 st. 13
agst. 1 3 y.-o. 6 st. 3
4 4 y.-o. 6 st. 10 to 8 st.
1 5 y.-o. 8 st. 1

agst. 6 horses.
Handicap at Newm., 1 Mile, 6 st. 5
agst. 2 3 y.-o. 6 st. 12 and 7 st.
1 4 y.-o. 7 st. 12
2 5 y.-o. 7 st. and 8 st. 8 (Russborough) second
1 6 y.-o. 7 st. 7

agst. 6 horses.
Once second and once third in big Handicaps.
In the Tradesmen's Pl., 43 Starters, not placed.

,, 11 ,, 1 ,, ,, 0 ,, In the Royal Hunt Cup at Ascot, 30 Starters, not placed.

ran 58 times, won 21½ times.

No. 52. Radulphus 1843 by The Saddler.

ran 2 year-old 1 time, won 0 times.
,, 3 ,, 6 times, won 0 ,, twice not placed.
,, 4 ,, 5 ,, ,, 3 ,,
,, 5 ,, 4 ,, ,, 1 ,,
,, 6 ,, 14 ,, ,, 7 ,, incl. 1 King's Pl.
,, 7 ,, 9 ,, ,, 2 ,,

ran 8 year-old 7 times, won 4 times. Handicap at York, 1¼ Miles, 8 st. 12
agst. 4 3 y.-o. 5 st. 2 to 5 st. 12
and 4 4 y.-o. 7 st. 2 to 8 st.

agst. 8 horses.
Fitzwilliam Handicap at Doncaster, 1 Mile, 8 st. 12
agst. 5 3 y.-o. 5 st. 9 to 7 st. 6
and 3 5 y.-o. 6 st. 5 to 8 st.

agst. 8 horses.
Handicap at Richmond, ⅝ Mile, 9 st. 5
agst. 4 2 y.-o. 5 st. to 6 st. 10
and 1 5 y.-o. 7 st. 10

agst. 5 horses.

,, 9 ,, 8 ,, ,, 2 ,, Craven St. at York, 1 Mile, 9 st. 3
agst. 3 y.-o. Lady Agnes 6 st. 10
and 4 y.-o. Iris 8 st. 4

,, 10 ,, 11 ,, ,, 2 ,, Trial St. at Airdrie, 1½ Miles, 9 st. 5
agst. 2 3 y.-o. 7 st. 4
1 4 y.-o. 8 st. 4
2 5 y.-o. 8 st. 10 to 9 st. 1
1 older 8 st. 9

agst. 6 horses.
Sweepst. at Paisley, 1¼ Miles, 9 st. 7
agst. 2 3 y.-o. 7 st. 4

,, 11 ,, 9 ,, ,, 4 ,, Member's Pl. at Paisley, 2 Miles, 9 st. 5
agst. 1 4 y.-o. 8 st. 9
and 1 6 y.-o. 9 st. 2
Trial St. at Lanark, 1¼ Miles, 9 st. 2
agst. 2 3 y.-o. 7 st. 4 and 7 st. 9
and 1 older 9 st. 2

,, 12 ,, 10 ,, ,, 4 ,, Selling Race at Epsom, 1¼ Miles, 9 st.
agst. 2 3 y.-o. 6 st. 13 to 7 st. 5
1 5 y.-o. 9 st. 2
1 older 9 st. 3

agst. 4 horses,
and on the same day second in Railway Pl., ¾ Mile,
5 3- and 5 y.-o. behind.
Handicap at Warwick, 5 Furl., 8 st. 2
agst. 1 3 y.-o. 6 st. 9
1 4 y.-o. 7 st. 6
1 older 8 st. 7

agst. 3 horses.

,, 13 ,, 9 ,, ,, 0 ,, in big Handicaps.

ran 14 year-old 12 times, won 4 times. Selling Race at Ripon, about 1 Mile, 7 st. 11
agst. 1 3 y.-o. 5 st. 9
and 1 6 y.-o. 7 st. 11

agst. 2 horses,
and won 2 Gentlemen's Races at Newmarket over $\frac{1}{2}$ Mile.

ran 105 times, won 33 times.

No. 53. Alonzo 1847 by Alpheus.

ran 3 year-old 9 times, won 4 times. D. not placed.
,, 4 ,, 11 ,, ,, 5 ,,
,, 5 ,, 12 ,, ,, 1 ,,
,, 6 ,, 7 ,, ,, 1 ,,
,, 7 ,, 8 ,, ,, 5 ,,
,, 8 ,, 8 ,, ,, 2 ,, St. Liz. Handicap at Northampton, $1\frac{1}{4}$ Miles, 8 st. 4
agst. 1 3 y.-o. 5 st. 6
5 4 y.-o. 5 st. 10 to 7 st. 3
1 6 y.-o. 8 st.

agst. 7 horses.
Handicap at Ludlow, $1\frac{1}{4}$ Miles, 8 st. 3
agst. 3 3 y.-o. 6 st. 6 to 6 st. 12
3 5 y.-o. 6 st. 12 to 8 st. 1
2 6 y.-o. 7 st. 3 and 7 st. 10

agst. 8 horses,
and 3 times third in good Handicaps.
,, 9 ,, 11 ,, ,, 3 ,, St. Liz. Handicap at Northampton, $1\frac{1}{4}$ Miles, 8 st. 2
agst. 3 3 y.-o. 4 st. 10 to 6 st.
7 4 y.-o. 5 st. 12 to 7 st. 7
1 5 y.-o. 6 st. 10
1 older 7 st. 5

agst. 12 horses.
Welter St. at Worcester, $1\frac{1}{4}$ Miles, 11 st. 3
agst. 1 3 y.-o. 8 st. 6
1 4 y.-o. 8 st. 6
1 5 y.-o. 9 st. 11

agst. 3 horses.
Lancaster Cup, $1\frac{1}{2}$ Miles, 8 st. 7
agst. 3 3 y.-o. 5 st. 7 to 6 st. 5
and 2 4 y.-o. 7 st. and 7 st. 12
3 times second.
,, 10 ,, 4 ,, ,, 0 ,, not placed in good Handicaps.

ran 70 times, won 21 times.

No. 54. Poodle 1849 by Ion.

ran	2 year-old	3 times,	won 2 times.	
,,	3 ,,	11 ,,	,, 4 ,,	
,,	4 ,,	13 ,,	,, 1 ,,	
,,	5 ,,	9 ,,	,, 3 ,,	
,,	6 ,,	9 ,,	,, 2 ,,	
,,	7 ,,	6 ,,	,, 2 ,,	
,,	8 ,,	11 ,,	,, 3 ,,	Gr. Metrop. St. at Epsom, 2¼ Miles, 8 st. agst. 8 3 y.-o. 5 st. 2 to 6 st. 8 2 4 y.-o. 8 st. 4 and 9 st. (Fisherman) 1 6 y.-o. 8 st. 8 (Winkfield) 1 older 7 st. 13 agst. 12 horses. Handicap at Newm., 1 Mile, 9 st. 2 agst. 4 4 y.-o. 6 st. 9 to 7 st. 9 1 5 y.-o. 8 st. 3 1 older 8 st. 7 agst. 6 horses. King's Pl. at Newmarket agst. 2 4 y.-o. and 1 5 y.-o. and in the Cesarew., 8 st. 8, not placed.
,,	9 ,,	9 ,,	,, 3 ,,	Bibury St., 1½ Miles, Gentlemen Riders, 10 st. 8 agst. 2 4 y.-o. 8 st. 13 and 1 5 y.-o. 11 st. in the Cesarew., 7 st., not placed.
ran		71 times,	won 20 times.	

No. 55. Mr. Sykes (Half-bred) 1850 by Sir Tatton Sykes.

ran	2 year-old	2 times,	won 1 time.	
,,	3 ,,	11 ,,	,, 2 times.	
,,	4 ,,	2 ,,	,, 0 ,,	
,,	5 ,,	11 ,,	,, 3 ,,	Cesarewitch, 6 st. 8 (34 horses).
,,	6 ,,	11 ,,	,, 1 ,,	King's Pl.
,,	7 ,,	3 ,,	,, 0 ,,	
,,	8 ,,	9 ,,	,, 1 ,,	Roxburgh Handicap, 1½ Miles, 7 st. 6 agst. 3 3 y.-o. 4 st. 10 to 5 st. 13 3 4 y.-o. 6 st. 6 to 7 st. 2 4 5 y.-o. 5 st. 11 to 7 st. 10 1 older 7 st. 12 agst. 11 horses. in the Cesarew., 7 st. 8, and in the Cambr., 8 st., not placed.

ran 9 year-old 13 times, won 2 times. City Handicap at Lincoln, $1\frac{1}{4}$ Miles, 7 st. 9
agst. 8 3 y.-o. 4 st. 10 to 5 st. 9
3 4 y.-o. 5 st. 12 to 7 st. 6
1 5 y.-o. 6 st. 10
1 older 7 st. 2

agst. 13 horses.

,, 10 ,, 3 ,, ,, 0 ,, in good Handicaps.

ran 65 times, won 10 times.

The most imposing performances of the above 55 examples from 1730 to 1850 begin with Marksman, born 1808, and slowly decrease after Inheritress, born 1840. In spite of the enormous increase of Thoroughbred breeding after 1850, we do not find any examples in the second half of the nineteenth century which can show better performances in this respect, and only a few with anything like these performances. According to the above examples, the best time seems to have been 1830 to 1840, as in this period the following horses, which accomplished extraordinary performances, were born, namely: Catherina, Isaac, Zohrab, Potentate, Bee's Wing, The Shadow, St. Lawrence, The Sailor, and Inheritress.

All these facts go to prove that the hardiness and endurance of the Thoroughbred, and especially the resisting capacity of its foundation, decreased about the second half of the nineteenth century. Whether at the same time the speed of the Thoroughbred, for distances up to $1\frac{1}{2}$ English miles, increased, cannot be clearly shown, but it is probable. Height and appearance have been improved, or, as the classical defender of the present day racing system, Admiral Rous, says, "We have bred more for size and strength." Yes, we have obtained that in our highly improved light breeds, but also at the same time a retrogression in the performing capacity which is required outside the racecourse. The celebrated Gimcrack, born 1760, No. 8 in above list, to which Admiral Rous points somewhat contemptuously as a "generally small horse," is supposed to have been only 14 hands; according to other statements, 13 hands, $3\frac{1}{2}$ inches, equalling 141 cm. Admiral Rous contends that in 1700 the average height was 13 hands, 3 inches, and that since then this average height has risen every twenty-five years by 1 inch, and ought therefore to be now 15 hands, 3 inches, equalling 160 cm.

The following list gives the sizes of the most important Thoroughbred stallions which I have been able to obtain.

No.	Names of Stallions.	Born.	Sire.	Size in Hands.	Inches.	cm.
1	Darley Arabian	1702	———	15	—	152,4
2	Mixbury	1704	The Curven Bay Barb	13	2	137,2
3	Godolphin Arabian	1724	———	15	—	152,4
4	Sampson	1745	Blaze	15	2	157,5
5	Matchem	1748	Cade	15	1	154,9
6	Herod	1758	Tartar	15	3	160,0
7	Eclipse	1764	Marske	15	2	157,5
8	Sir Peter	1784	Highflyer	16	—	162,6
9	Gohanna	1790	Mercury	15	1	154,9
10	Sorcerer	1796	Trumpator	16	1½	166,3
11	Orville	1799	Beningbrough	16	—	162,6
12	Castrel	1801	Buzzard	16	—	162,6
13	Whalebone	1807	Waxy	15	½	153,7
14	Partisan	1811	Walton	15	2	157,5
15	Dr. Syntax	1811	Paynator	15	—	152,4
16	Filho da Puta	1812	Haphazard	16	—	162,6
17	Lottery	1820	Tramp	16	—	162,6
18	Camel	1822	Whalebone	15	2	157,5
19	Mulatto	1823	Catton	15	2	157,5
20	Little Red Rover	1827	Tramp	14	3	149,9
21	Plenipotentiary	1831	Emilius	15	2	157,5
22	Touchstone	1831	Camel	15	2	157,5
23	Mundig	1832	Catton	15	3	160,0
24	Sheet Anchor	1832	Lottery	16	1	165,1
25	Birdcatcher	1833	Sir Hercules	15	3	160,0
26	Harkaway	1834	Economist	16	2	167,6
27	Don John	1835	Tramp or Waverley	15	3	160,0
28	Bloomsbury	1836	Mulatto	15	3	160,0
29	Nutwith	1840	Tomboy	15	2¼	158,2
30	Newminster	1842	Touchstone	15	2	157,5
31	Chanticleer	1843	Birdcatcher	16	—	162,6
32	The Cossack	1844	Hetman Platoff	15	2	157,5
33	Daniel O'Rourke	1849	Birdcatcher	15	2	157,5
34	Stockwell	1849	The Baron	16	—	162,6
35	Lexington	1850	Boston	15	3	160,0
36	Saunterer	1854	Birdcatcher	15	3	160,0
37	Buccaneer	1857	Wild Dayrell	15	3	160,0
38	Macaroni	1860	Sweetmeat	15	3	160,0
39	Blair Athol	1861	Stockwell	16	—	162,6
40	Lelio	1862	West Australian	15	2	157,5
41	Rosicrucian	1865	Beadsman	16	—	162,6
42	Prince Charlie	1869	Blair Athol	17	—	172,7

No.	Names of Stallions.	Born.	Sire.	Size in		
				Hands.	Inches.	cm.
43	Hector	1872	Virgilius	15	2	157,5
44	Petrarch	1873	Lord Clifden	15	3	160,0
45	Springfield	1873	St. Albans	16	—	162,6
46	Chamant	1874	Mortemer	16	—	162,6
47	Beauclerc	1875	Rosicrucian	15	3	160,0
48	Isonomy	1875	Sterling	16	—	162,6
49	Charibert	1876	Thormanby	15	3	160,0
50	Bend Or	1877	Doncaster	16	1	165,1
51	Despair	1879	See Saw	15	2	157,5
52	St. Simon	1881	Galopin	16	½	163,9
53	Esterling	1882	Sterling	16	—	162,6
54	Melton	1882	Master Kildare	15	3	160,0
55	Aughrim	1883	Xenophon	16	—	162,6
56	Kendal	1883	Bend Or	16	1	165,1
57	Minting	1883	Lord Lyon	16	¼	163,2
58	Ormonde	1883	Bend Or	16	1	165,1
59	Gallinule	1884	Isonomy	16	—	162,6
60	Ayrshire	1885	Hampton	16	—	162,6
61	Carbine	1885	Musket	15	3½	161,3
62	Winkfield	1885	Barcaldine	15	3	160,0
63	Amphion	1886	Rosebery	15	3	160,0
64	Donovan	1886	Galopin	16	1	165,1
65	Enthusiast	1886	Sterling	16	—	162,6
66	Melanion	1886	Hermit	16	—	162,6
67	Hackler	1887	Petrarch	16	1	165,1
68	Martagon	1887	Bend Or	16	—	162,6
69	Sainfoin	1887	Springfield	15	3	160,0
70	St. Serf	1887	St. Simon	16	3	170,2
71	Common	1888	Isonomy	16	1	165,1
72	Orme	1889	Ormonde	16	1	165,1
73	Suspender	1889	Muncaster	16	2	167,6
74	Red Prince	1889	Kendal	15	3	160,0
75	Childwick	1890	St. Simon	16	—	162,6
76	Isinglass	1890	Isonomy	16	1	165,1
77	Grey Leg	1891	Pepper and Salt	15	2	157,5
78	Ladas	1891	Hampton	16	—	162,6
79	Sir Visto	1892	Barcaldine	16	1	165,1
80	Persimmon	1893	St. Simon	16	2	167,6
81	Galtee More	1894	Kendal	15	3¾	162,0
82	Velasquez	1894	Donovan	15	3	160,0
83	Flying Fox	1896	Orme	16	½	163,9
84	Ard Patrick	1899	St. Florian	16	—	162,6
85	Maintenon	1903	Le Sagittaire	16	3½	171,5

In order to arrive at a fair comparison, it is necessary to take six of the most important stallions from the above table for three different periods, and we then get the following interesting results :—

1st Period—Second Half of the Eighteenth Century.

Matchem	born 1748	....	154.9 cm. size.
Herod	,, 1758	....	160.0 ,, ,,
Eclipse	,, 1764	....	157.5 ,, ,,
Sir Peter	,, 1784	....	162.6 ,, ,,
Gohanna	,, 1790	....	154.9 ,, ,,
Orville	,, 1799	....	162.6 ,, ,,

Average, 15 hands, $2\frac{1}{2}$ inches = 158.75 cm. size.

2nd Period—Middle of the Nineteenth Century.

Touchstone	born 1831	....	157.5 cm. size.
Birdcatcher	,, 1833	....	160.0 ,, ,,
Newminster	,, 1842	....	157.5 ,, ,,
Stockwell	,, 1849	....	162.6 ,, ,,
Buccaneer	,, 1857	....	160.0 ,, ,,
Macaroni	,, 1860	....	160.0 ,, ,,

Average, 15 hands, 3 inches = 159.6 cm.

3rd Period—The Last 25 Years of the Nineteenth Century.

Isonomy	born 1875	....	162.6 cm. size.
Bend Ór	,, 1877	....	165.1 ,, ,,
St. Simon	,, 1881	....	163.9 ,, ,,
Ormonde	,, 1883	....	165.1 ,, ,,
Gallinule	,, 1884	....	162.6 ,, ,,
Persimmon	,, 1893	....	167.6 ,, ,,

Average, 16 hands, $\frac{3}{4}$ inch = 164.5 cm. size.

From above it can be seen that the height of the Thoroughbred in England has increased somewhat quicker than Admiral Rous supposed. The desire to increase the height seems to me to be dangerous, and will probably very soon only be possible at the expense of the fundament. The present day situation of racing and breeding seems to be approaching *nolens volens* a further increase of height.

To judge rightly of the retrogressive movement in the breeding of Thoroughbreds, as regards their general capabilities (Leistungsfähigkeit), one must take into consideration that the races of to-day are run over shorter distances, and without heats, and on an average at a considerably quicker pace than was the case 100 years ago, and also that the increased pace makes greater demands on the fundament. One must, therefore, expect that the resisting strength of the fundament will be more quickly used up. To the more intensive use of racehorses in a shorter time, due to railways, and the numerous racecourses, as well as to the many short races, which require a quick getting off, must be attributed the fact that the nerves and health are more quickly destroyed. The question as to whether the Thoroughbreds of 100 years ago would not also have deteriorated quicker if they had had

to undergo present day methods, and as to whether the present day Thoroughbreds, on the other hand, would not have held out longer under the conditions of 100 years ago, may be answered as follows: Both cases can only happen slowly, *i.e.*, if the supposed causes have lasted and had an influence for several generations. On the basis of physiological observations and practical experiences, we must assume that the present over-exertion, especially of the younger Thoroughbred stock, for many consecutive generations, has an unfavourable influence on the constitution. These unfavourable effects, which are an especial consequence of the many early races of two-year-olds, are distinctly recognisable, also outside the course, by many retrogressive signs. The most conspicuous of these consists in the fairly regular decrease of the percentage of pregnant mares, from about 80 per cent. in the year 1851 to 70 per cent. in recent years.

The following list, the figures of which are taken from the General Stud Book, gives an exact summary of this retrogressive movement:—

Year	Foals Born			Aborted	Barren	Total Covered	Pregnant %	Aborted %
	Colts	Fillies	Total					
1851	538	597	1135	43	302	1480	79,59	3,65
1852	536	538	1074	71	334	1479	77,42	6,61
1853	574	558	1132	42	369	1543	76,09	3,71
1854	619	582	1201	35	440	1676	73,75	2,83
1855	610	609	1219	73	480	1772	72,91	5,65
1856	705	650	1355	61	448	1864	75,97	4,31
1857	691	679	1370	58	452	1880	75,96	4,06
1858	756	736	1492	64	424	1980	78,59	4,11
1859	745	722	1467	77	484	2028	76,13	4,99
1860	738	726	1464	85	498	2047	75,67	5,49
1861	750	749	1499	73	525	2097	74,96	4,64
1862	718	763	1481	68	562	2111	73,38	4,39
1863	783	757	1540	88	556	2184	74,54	5,41
1864	756	811	1567	95	537	2199	75,58	5,72
1865	786	799	1585	136	556	2277	75,58	7,90
1866	851	855	1706	96	686	2488	72,43	5,33
1867	893	964	1857	84	645	2586	75,06	4,33
1868	972	949	1921	127	719	2767	74,02	6,20
1869	1009	1041	2050	113	669	2832	76,38	5,22
1870	983	965	1948	125	727	2800	74,04	6,03
1871	928	968	1896	147	693	2736	74,67	7,20
1872	881	888	1769	94	694	2557	72,86	5,04
1873	862	858	1720	74	621	2415	74,29	4,12
1874	857	870	1727	72	657	2456	73,25	4,00

Year	Foals Born			Aborted	Barren	Total Covered	Pregnant %	Aborted %
	Colts	Fillies	Total					
1875	824	910	1734	86	634	2454	74,16	4,73
1876	879	863	1742	121	636	2499	74,55	6,55
1877	941	915	1856	105	722	2683	73,09	5,35
1878	926	969	1895	168	723	2786	74,05	8,14
1879	1002	952	1954	108	798	2860	72,10	5,19
1880	969	954	1923	161	801	2885	72,24	7,73
1881	928	1063	1991	110	826	2927	71,78	5,24
1882	920	996	1916	140	818	2874	71,54	6,81
1883	1006	958	1964	121	748	2833	73,60	5,80
1884	1001	956	1957	127	801	2885	72,23	6,09
1885	1019	1061	2080	129	753	2962	74,58	5,84
1886	1100	1066	2166	139	791	3096	74,45	6,03
1887	1063	1069	2132	135	861	3128	72,47	5,96
1888	1069	1141	2210	129	839	3178	73,60	5,52
1889	1201	1159	2360	146	940	3446	72,72	5,83
1890	1213	1290	2503	144	1002	3649	72,54	5,44
1891	1368	1419	2787	192	1120	4099	72,68	6,45
1892	1517	1523	3040	258	1206	4504	73,24	7,82
1893	1662	1613	3275	156	1412	4843	70,84	4,55
1894	1651	1562	3213	184	1400	4797	70,82	5,42
1895	1674	1557	3231	124	1327	4682	71,66	3,70
1896	1652	1652	3304	144	1287	4735	72,82	4,18
1897	1785	1753	3538	150	1333	5021	73,45	4,07
1898	1774	1762	3536	149	1450	5135	71,76	4,04
1899	1706	1808	3514	147	1405	5066	72,27	4,02
1900	1753	1674	3427	169	1310	4906	73,30	4,70
1901	1743	1697	3440	138	1416	4994	71,65	3,86
1902	1797	1651	3448	138	1380	4966	72,21	3,85
1903	1629	1564	3193	123	1364	4680	70,85	3,71
1904	1565	1542	3107	132	1272	4511	71,80	4,08
1905	1312	1461	2773	124	1091	3988	72,72	4,28
1906	1418	1381	2799	117	1153	4069	70,17	4,01

This fairly uniform decrease in the percentage of pregnant mares begins just at the time at which, looked at from the standpoint of changed weight differences, the decrease of the capabilities (Leistungsfähigkeit) of the Thoroughbred seems to commence. In the chapter relating to the changed weight differences (looked at from this one-sided point of view), a slow improvement of the Thoroughbred stock is supposed to have existed in the first half of the nineteenth century. Corresponding with this, the percentage

of foaling mares seems also to have increased in the first half of the nineteenth century. According to some superficial tests, I have found that the percentage of foaling mares varies in the years 1820 to 1840 from 74 to 75 per cent. The statistics in the General Stud Book begin only with the year 1846, and are as follows:—

Year	Foals Born			Aborted	Barren	Covered	Pregnant %	Aborted %
	Stallions	Mares	Total					
1846	491	481	972	41	310	1323	76,57	4,05
1847	486	491	977	47	303	1327	77,17	4,59
1848	483	493	976	57	304	1337	77,26	5,52
1849	—	—	—	—	—	—	—	—
1850	504	537	1041	51	282	1374	79,48	4,67

The year 1851, therefore, seems to be the culminating point in this respect.

The list of Thoroughbred mares in England which have produced 17 and more living foals, shows from 1850 a distinct retrogression. In spite of the double to fourfold number of brood mares in the second half of the nineteenth century, the breeding performances have decreased in this respect, with the exception of the extraordinary performance of Queen Esther, born 1864, which produced 22 foals. The number of mares with 17 and more foals is far from having increased proportionately, and the highest performance of 20 foals becomes more scarce. In the last thirteen years, from 1871 to 1883, the above list (pages 62 and 63) only shows 34 mares, none of which have produced 20 foals, and only 2 (Pillage, born 1871, and Miss Mannering, born 1874) 19 foals—whilst previously in the thirteen years from 1832 to 1844 (in which time there were only a quarter of the brood mares existing as compared with 1871 to 1883), 40 mares are mentioned, of which 2 mares (Florence, born 1839, and Prairie Bird, born 1844) have produced 20 foals, and 6 mares (Whisker-mare, born 1832, Annette, born 1835, Sir Hercules-mare, born 1839, Eulogy, born 1843, Queen Mary, born 1843, and Defenceless, born 1844) produced 19 foals. It is also noteworthy that from about 1850, in the cases of most mares with 17 and more foals, the mares had been mated when three years old oftener than before 1850.

Also, the performances of old mares under difficult conditions, as previously indicated (pages 65—76), show from about 1850 a decrease both in the number of extraordinary performances and in the importance of same. After Pocahontas, born 1837, Alice Hawthorn, born 1838, Queen Mary, born 1843, Haricot, born 1847, we do not find in the subsequent years any breeding performances to equal them.

The decreased performances of brood mares as regards the number of foals, as well as their special performances at a great age, must be taken to verify the fact that the longevity of the mares in the second half of the nineteenth century has somewhat decreased. Unfortunately, I am not able to give a sufficiently long list of the longevity of the mares as a proof, but one may well assume that the length of the lives of the mares has decreased just as much as that of the stallions, and this fact is proved by the list given on pages 78–83. This conspicuous decrease of the length of the lives of the stallions is all the more remarkable, as the progress of hygiene, improved stabling, and other conditions, as well as the more reasonable training of horses, would lead one to expect longer lives. As a matter of fact, this has taken place in the human race. A change in the length of the lives of English born stallions in the first half of the nineteenth century is not recognisable from the above list. In the middle of the nineteenth century, however, these long lives seem once again to occur, as shown by the following five examples, in the short period of five years:—

Forbidden Fruit	born	1853,	died at	29	years.
Kentucky	,,	1853	,,	31	,,
Gunboat	,,	1854	,,	29	,,
Buccaneer	,,	1857	,,	30	,,
Thunderbolt	,,	1857	,,	31	,,

After 1860 the length of life decreases slowly but distinctly, and the number of stallions which have attained 25 years is much too small in proportion to the remarkably increased breeding. The number of stallions which have attained 25 years and more has been in no decade greater than in that of 1850 to 1859, namely, 30. Already in the following two decades a distinct decrease is recognisable: 1860 to 1869, 24 stallions, and 1870 to 1879, 20 stallions.

From the list of American born Thoroughbred stallions (page 84), we can also gather that the length of their lives has decreased. One can distinctly recognise this decrease about ten years later than in England, but it is more sudden and more apparent, especially if the enormous increase in Thoroughbred breeding is taken into consideration.

From a further consideration of the table (pages 87 to 100) we can glean that the capability of the sires to produce excellent breeding and racehorses has also decreased from about their twentieth year, since the middle of the last century, and that considerably. The middle of the nineteenth century shows also in this respect a distinct culminating point. Of the stallions which have excelled after 1860 through prominent production, I can only mention 4 in the above table, namely, Rosicrucian, Hermit, Hampton, and Galopin, and here I may make the following remark: (1) Rosicrucian is a son of

Beadsman, which only ran twice as a two-year-old, the first time in July. All his ancestors in the male line never ran as two-year-olds. (2) Hermit is a son of Newminster, which did not run as a two-year-old. (3) Hampton is a son of Lord Clifton (by Newminster), who only ran three times as a two-year-old, the first time in June. (4) Galopin is a son of Vedette, who only ran twice as a two-year-old, first time in August.

Of the remaining stallions which lived a long time and produced prominent stock at a great age, one may mention, after 1860, the following horses in England: Springfield, Beauclerc, Bend Or, and St. Simon. Springfield, born 1873, attained 25 years, but produced in the last six years only 5 unimportant winners. Beauclerc, born 1875, also attained 25 years, and in the last six years produced only 1 unimportant winner. Even St. Simon, who reached 27 years, seems after his twentieth year to have deteriorated with regard to his former very prominent breeding power, as in the last eight years he could not produce any winner of importance. In the case of Bend Or, born 1877, 26 years old, the remarkable phenomenon blood of Old Stockwell seems to have had some effect still, as at the age of 24 he could still produce two such good horses as Golden Gleam and Rouge Croix, and as a 25-year-old, Radium, and Gold Rioch.

Not only in theory, as I mentioned in the chapter about weight-differences, but also various statistics (as already given), point repeatedly to the middle of the nineteenth century as a period from which the retrograde movement in the development of Thoroughbred breeding in England seems to have begun. It is worthy of note that it is just at the time when the almighty Third Dictator of the Turf, Admiral Rous, who first of all became celebrated by working out the scale of weights, became Handicapper of the Jockey Club (1855). The number of short races (1 mile and under 1 mile) begins to be more than half the races run, and the number of two-year-old racehorses (see page 29) begins to exceed the number of three-year-olds (1856). The impatience of many racing stables anxious to get money, and the power of the bookmaker, are finally the causes of the races for yearlings being held for four consecutive years (1856 to 1859). The most energetic opponent of the races for one and two-year-olds, Lord Jersey, died in 1859. Buccaneer, born 1857 (who still could produce as a 24-year-old Buda-gyongye N.D., as a 25-year-old Feneck OD. U., and Ollyannincs PL., and as a 27-year-old Talpra Magyar), ran as a five-year-old his last race at Salisbury with 9 stone, 5 lbs. up, the mile in 1 minute, 38 seconds (=16.42 m. per second), and therefore beating any mile performance before or since. Certainly Bendigo ran in 1885 a mile in 1 second quicker (=16.62 m. per second), but he carried, also as a five-year-old, 1 stone less). Abd-el-Kader won in 1850 the Liverpool Grand National, in the largest field (32 competitors), and as long as the race was run, on the then existing track, in the shortest time (9 minutes, 57½ seconds). In 1849 Stockwell was born, the

champion of the whole English Thoroughbred breeding.[1] Leamington, born 1853, is most probably the last Thoroughbred stallion born in England which as a 24-year-old could produce an Epsom Derby winner, namely, Iroquois. The number of pregnant mares reached the never before attained number of about 80 per cent. (1851). The number of foals born exceeds 1850, the first thousand (1,041 foals) and in 1859 the second thousand (2,028 foals). English Thoroughbred breeding was in every respect in the zenith of its performances, and England herself had become the first world power after the Crimean war! In this decade were produced such a great number of racecourse champions and never-to-be-forgotten pillars of Thoroughbred breeding as has never occurred before or since in such a short period. The following examples demonstrate this:—

1. The Flying Dutchman D. u. L. 1849.
2. Voltigeur D. u. L. 1850.
3. Teddington D. 1851.
4. Newminster L. 1851.
5. Stockwell 2 u. L. 1852.
6. West Australian 2, D. u. L. 1853.
7. Rataplan Gold Vase Asc. 1853, Dcp. 1855 u. 18 King's Plates.
8. Wild Dayrell D. 1855.
9. Blink Bonny D. u. O. 1857.
10. Vedette 2 u. Dcp. 1857.
11. Beadsman D. 1858.
12. Saunterer Gcp. 1858.
13. Fisherman Acp. 1858 and 1859.
14. Thormanby D. 1860.
15. St. Albans L. 1860.
16. The Wizard 2. 1860.

Amongst these 16 champions I have also numbered Fisherman, who never attained classical honours, but who has become famous because

[1] Stockwell's progeny has won 17 times classical races in England (amongst these the Derby 3 times, and the St. Leger 6 times) and 16 times ran as seconds. The 3 first places were occupied by Stockwell's progeny 1862 in the 2,000 Guineas, and 1866 in the Derby. Even at 20 years of age, Stockwell had a breeding power so as to produce in one year the winners of the Derby and the 2,000 Guineas, as well as the seconds in the Derby, St. Leger, and the Oaks. Amongst these was one of the greatest heroes, namely, Doncaster. Isinglass, St. Gatien, Iroquois and Doncaster were the last Derby winners who could still win big races as five-year-olds. Doncaster did not run as a two-year-old! Stockwell is in modern times most nearly approached as a sire by St. Simon. The St. Simon progeny has also won up to now 17 classical races, amongst them twice the Derby and 4 times the St. Leger, but were only 10 times seconds. One must, however, consider that St. Simon reached 27 years, while Stockwell, unfortunately, died six years earlier, that is, as a 21-year-old (5th of May, 1870). Stockwell, furthermore, has produced 209 winners, who have won 1,147 races. St. Simon, on the other hand, only 160 winners (up to 1907 inclusive), who have won 506 races. In their best years Stockwell's progeny won 132 races, and St. Simon's progeny 47 races in one year.

between the age of two and six he ran in 119 races and won 69. He is perhaps the last representative of that hardiness and toughness which are, unfortunately no longer in the same degree, the attribute of our present day Thoroughbreds. Old Tom Parr used to say very characteristically of Fisherman: "He would never begin to go until he had run two miles, and then he would wear the heart out of anything on four legs; how he could be trained on a turnpike road, and raced every day, and never leave a grain in the manger, though he ate more solid corn than any other horse."

It is worthy of note that also in American Thoroughbred breeding the king of all Thoroughbred stallions, corresponding to our Stockwell, was born at almost the same time, namely, Lexington (1850 by Boston and Alice Carneal), sire of about 600 horses, amongst which 236 winners. The Americans, who are believers in time performances, were especially astonished at New Orleans, in 1855, by the hitherto unattained performance of Lexington in the match against time (4 miles in 7 minutes, 19¾ seconds, carrying 103 lbs.). I must here remark that Lexington became blind as a six-year-old, very likely in consequence of an inflammation of the eyes, first in the right eye, and then in both. During his 21 years activity at the stud this defect was not inherited by his progeny, but they very plainly inherited his longevity. Also the trotter king in America was born at the same time, namely, Hambletonian 1849 by Abdallah.

Soon after this high tide mark of English Thoroughbred breeding, more and more notice was taken of ideas which tended to a deterioration of the Thoroughbred. The classical and very clever advocate of Thoroughbred breeding, Admiral Rous, published in 1852, in the preface to his book, "On the laws and practice of horse racing," and 1870 in Bailey's Magazine, volume 18, "Racing Past and Future," a defence of the present racing system with its short distances, light weights, and many bets. He admits the numerous and early breakdowns of Thoroughbreds, but attributes them to the too frequent starts caused by railways. He further points out the greater pace, which has increased very much in consequence of the shorter distances, and of the larger fields. Finally, the Admiral points to the same champions of Thoroughbred breeding as mentioned above, and concludes therefrom that the Thoroughbred has never been as good as now. Admiral Rous (born 1795, died 1877) passed his best years just at the height of Thoroughbred breeding, which had greater attractions than the starting point of the retrograde movement could have.

Against the opinion of Admiral Rous we have the interesting judgment of a practical man, who also lived in the times preceding and succeeding the above-mentioned zenith of Thoroughbred breeding. I am speaking of the well-known jockey, John Osborne, born 1833, who rode his first race in 1846 and his last race in 1892. Osborne says (*vide* Ashgill & Radcliffe, page 428):—"The method of training horses in the present day is quite different to what it was when I began. Horses are very much lighter now; they

have neither the bone nor the substance that Thoroughbreds had fifty years ago. Of course, in the old times they were sweated a good deal. Heavy cloths were put on them, and they were galloped three and four miles in them. That plan has been discontinued for many years. I don't know that sweating is weakening to a horse. Old John Scott was a great believer in sweating and bleeding. I am certain that the constitution of horses of the present day would not stand such work; the modern breed is neither so robust nor so strong. Formerly it was quite a common thing for horses to run three and four mile heats. If they were subjected to that now they wouldn't be able to come out of the stable for a month after. I have had some experience myself of riding horses in heats—two mile heats; and I have ridden in four mile races but never in four mile heats. I am fully convinced the constitution of horses of the present day is not as strong as it was forty or fifty years ago. It puzzles me to account for the degeneration in the stoutness of the modern racehorse; really, I cannot point to the cause of it."

The well-known Malton trainer, Charles Lund, speaking about this question in the year 1899, expresses himself as follows (Ashgill, page 430): "Racehorses in the olden days were, on the average, 2 stone heavier than those of the present day. Now, horses like Touchstone and West Australian were, if one might say so, twice the size in substance and power in comparison with the present day racehorse, most of which are light of bone and substance, and comparatively weedy in appearance. Present day trainers have gone in for speed too much, with the result that the great majority of the horses are too finely built."

The following points show that Thoroughbred horses in England have deteriorated from the middle of the nineteenth century as far as capabilities (Leistungsfähigkeit), hardiness, and the whole constitution are concerned :—

(1) Diminution of weight differences between weights for horses of different ages.

(2) Decreased capability of the older racehorses on the flat.

(3) The decreased percentage of pregnant mares.

(4) The decreased number of foals.

(5) The decreased breeding performances of the brood mares at a great age and under difficult circumstances.

(6) The shorter lives of Thoroughbreds and the decreased prepotency at a great age.

CHAPTER VI.

Conclusions and Propositions as to the Improvement and Breeding of Thoroughbreds.

THE great and important duties which the Thoroughbred accomplishes in the breeding of other light horses, justified, and even also obliged, those people who stood outside the domain of Thoroughbred breeding, to criticise the basis of all its performances, and breedings, on which it is built up, and on which it continues. Our present day Thoroughbred is the outcome of race propositions, and of the manner of breeding and training, which those propositions entail. These propositions are made on human understanding, and are influenced by human misunderstanding, and what is much worse, by many side interests. Only by clever and purpose-answering race propositions, as well as by reasonable breeding and rational training, shall we be able to still more improve our Thoroughbreds. After the observations made in the previous chapters, there seems to be no doubt that our present day Thoroughbred needs improving, and its room for improvement is just as certain as agreeable.

The chief attacks which have been made up to now against the Thoroughbred may be summed up as follows :—

1. Faulty conformation.
2. Want of endurance for long distances.
3. Want of cleverness.
4. A too weedy and light fundament.
5. A want of capacity to carry heavy weights.
6. Nervousness, difficult temperament, and the bad use of food.

1.—*Faulty conformation.* This oldest reproach against the Thoroughbred, rests partly on the fact that we over-estimate our knowledge of this matter, and partly on our inexperience in the judging of horses in training. I call to mind the opinion of the Landstallmeister von Burgsdorf, expressed in 1817 in a special brochure. He went on to say that most English Thoroughbreds had spavin, and that the English Thoroughbred must shortly disappear. We must not forget that from chipping come chips, and that of course every kind of breeding must produce a certain percentage of faulty

individuals. Training and racing, moreover, show up many little faults in form which would not have been noticed when merely looking at a horse as, for example, at shows. Nevertheless, it is interesting and instructive to see that the Thoroughbred, even with such great faults, is still capable of performing very astonishing things, whilst a non-Thoroughbred with the same faults in most cases could not do anything. If with faulty conformation it is still capable of doing well, the substance used must be very good indeed.

The so-called Biedenweg's instructions for judging horses competing for State prizes, which are still in vogue in the Prussian State, but probably very rarely followed, can, in my opinion, be dispensed with. One cannot lay down laws to judge the conformation of a horse to suit all cases. The views as to what form a horse should have differ, and are, as history teaches, also changeable. There have been times in which long-legged horses were preferred to short-legged ones, and in which long shin bones were considered an advantage. I also believe that many so-called faults in a horse of 100 years ago were more dangerous than they are to the present day horse, and *vice versa*. In short, our doctrine as to the conformation of a horse will always have its limits, and will often change in the future, according to the experiences which we gather from the racecourse and from the other uses to which the horses are put. Races and other tests of performances will in themselves destroy what is useless. If, however, Biedenweg's instructions exclude *a priori* certain conformation, we rob those horses which are supposed to be better of the opportunity of showing that they can perform better things.

The better form has not been proclaimed as such by the vacillating opinions of judges, but acquired for itself the right to be judged as such by beating competitors. The history of Thoroughbred breeding teaches that even without such police rules as Biedenweg's instructions are, faults are finally eradicated automatically. The best example of an effective elimination of faults by racing is perhaps the walk of the Thoroughbred. I know of no breed which produces so many horses which walk so correctly as the English Thoroughbred. Where is the half-bred stallion in Germany which without freshness walks as correctly, gracefully and beautifully as Ard Patrick, who, besides, won the Epsom Derby, and beat the four-year-old Rock Sand, and Sceptre? The eradication of horses with irregular walk is not done in England, as in the breeding of Half-breds, or as they do when buying horses for military mounts, by picking out the regular walkers for the stud or military service, but by training and the struggle on the racecourse. Military commissioners can be as strict as they like in refusing to buy irregular walkers, but they will never be able to judge as keenly and as correctly as the winning post. Anybody can prove this statement if he will only examine the same horses two years later at the troop after manœuvres. He will find there are more irregular walkers than in the racing stables. The regular walk of horses that have not worked, but are well led in, disappears very often with working as butter melts in the sun.

Race propositions must therefore offer sufficient opportunity to eradicate these different faults, and not protect, for example, the roarers, not leave too much to chance, and not damage the temperament of young horses by too many short races. Those handicaps, so much loved by the bookmakers, for horses of all ages, with the light weights, for distances under 1 mile, have also no value for breeding, and should be much more restricted than is at present, unfortunately, the case in England. The making of racecourses, for example, over uneven ground (as more detailed in No. 3), may also have a favourable effect on the form of Thoroughbreds by eradicating every unharmonious conformation of racehorses.

2.—*Want of endurance for long distances.* This reproach is the most common, and not to use a stronger expression, a very ill-considered one. We have proved that no other race of horses has attained the endurance of the Thoroughbred in many long distance races. Generally the above reproach is applied to the former long races over 4 miles with heats, as they took place in the time of Eclipse. We must, however, emphasise that the removal of these long races with heats was the first step towards progress. The errors made must be found somewhere else, and as we shall soon see, one did not go far enough in the shortening of distances.

Not only representatives of Half-bred breeders, but also breeders and admirers of Trotters and Thoroughbreds, have always rightly aimed at the production of a horse with the greatest possible endurance as the goal of their breeding efforts. As history shows us, however, they were wrong in demanding performances over too great distances in order to reach this goal. They forgot that races should not only prove which is the best, but that the object of this test, and of the training for this test, should be to improve the stock. A flat race, for example, over 20 kilometres or more (in Moscow there exists one for 20 versts) does not improve the stock but ruins it. The breeders of Trotters in America tried in the middle of the last century to get 100 miles covered in 10 hours. After that they wanted 20 miles doing in 1 hour. They also attained this result. They, however, observed at the same time that the health of the horses suffered, that is to say, that horses did not improve, but rather their value as breeding stock depreciated. The practical Americans soon found that the right distance for testing breeding stock is the one on which one can train horses, *i.e.*, prepare them without damaging their health, and they found—and I think they are right—that this right distance is 1 English mile. Russian Trotters kept to their long distances. The result is, firstly, the American Trotter has improved its record in 1818 of 3 minutes per mile to 2 minutes to-day; secondly, the American Trotter to-day shows more endurance for every distance than the Russian. The improved record of Russian Trotters since 1860 (there are no reliable statements for former years) is mainly due to the establishment of good racecourses (hippodromes instead of roads), and to the introduction of sulkies instead of the four-wheeled droskies, which

weighed two and more puds heavier. In 1860 the six-year-old Welisar from Chrenowoi, ran in a four-wheeled drosky 2 versts in 3 minutes, 27 seconds, and in 1896 the best record was in a sulky, 2 versts in 3 minutes, 13½ seconds. Since 1893, the year in which sulkies were generally introduced, the record performances of Russian Trotters have made very little progress indeed; for example, in 1896 the best record for 1½ versts was 2 minutes, 15½ seconds, and in 1907 the best record for the same distance 2 minutes 14 seconds. Trotting races for distances over more than 1 mile are justified and useful as a test for an individual horse in use, just the same as all kinds of long distance rides for Thoroughbreds and Half-breds. As a matter of principle, one ought to distinguish tests for breeding stock from tests for stock in use. The former have for object the improving of the production of capable breeding stock, whilst the latter serve to show what the maximum performance is, and how it may possibly be best attained, if need be, without considering whether the stock is hereby damaged or not.

The question, what distance, looked at from the above point of view, is the right one for flat races, still requires solving. At the time of Eclipse the chief races were run over distances of 4 miles. The classical Derby is now run in all countries over about 2,400 metres. The Grand Prix de Paris over 3,000 metres. The Doncaster St. Leger 2,937 metres. The longest races are in France, in the Prix Gladiateur, 6,200 metres. In England there are now no races over 3 miles. In Ireland there is still one over 4 miles, and two over 3 miles, and in Germany, Second Class Autumn Meeting in Hoppegarten, 4,800 metres. In the course of time the art of training has, of course, made much progress, and trainers have learned that gallops for more than 2,000 to 2,400 metres, also in preparation for the Derby and longer distances, are bad. The gallops which were still in force twenty years ago, and which were often run like a race over the Derby distance, have almost totally ceased. Most trainers incline to the opinion that such long gallops do not improve the condition of the horse, but rather the reverse. If that is so, it is a mistake to have flat races for longer distances than about 2,400 metres. It is a mistake to have races over distances which do not improve the rightly trained stock, but rather do it harm. To fix the right limit with certainty is very difficult, but the Derby seems to be the utmost limit for a useful race distance. My own opinion is that for three-year-olds 2,000 metres, and for two-year-olds 1,200 metres is the correct and most useful test distance, and I should consider it a sign of progress if all so-called classical races, *i.e.*, such as serve for breeding stock, were raced over these distances, as is the case with the American Trotters. Training would not only be facilitated thereby, but the horses would also prosper more. To train horses for different distances at the same time, and especially for very short distances of 800 to 1,400 metres, as is now demanded, is of no use whatever for breeding stock. Races held for long and short distances, in order to use stock which is not used for breeding, may be useful and instructive, as long as the number

of these races is kept in moderate bounds and suitable to the requirements. For the same reasons there should not be too many selling races and handicaps.

It is wrong to believe that races of 2,000 metres for three-year-olds and 1,200 metres for two-year-olds would give little chance to so-called stayers, and would thus endanger the aim and end, namely, the breeding of horses for endurance. What is called generally a horse with plenty of endurance, and therefore one specially suitable for long distances, is not the same as what is called a stayer on the racecourse, as opposed to a flyer. I really believe that flyers are often more suited for long distance rides and other feats of endurance, as well as for steeplechases, than stayers.

The quickest pace in which a horse can gallop a certain given distance without endangering the speed necessary for the finish, I would like to call its special pace. This special pace diminishes in the case of every horse with the growing distance. In the case of horses which we call stayers, this diminishing of special pace is less than in the case of those which we call flyers. At the same time the former have to put in a less speed than the latter. The scale at which this decrease takes place, and the amount of reserved speed, show in which degree the horse is a stayer or a flyer. Here I would like to further remark that the stayer can increase its speed only very little or not at all after a pace which is under its special pace.

The special pace t of the stayer is greater than the special pace t_1 of the flyer. The stayer, therefore, gains on the way per metre a distance equal to M. On the whole distance d the advantage of the stayer amounts to d M. If s equals the speed of the stayer, and s_1 equals the speed of the flyer, the question is whether

$$d. M. > s_1 - s \text{ or } d. M. < s_1 - s$$

i.e., whether the flyer on a given distance can, through its superior speed, gain the advantage which the stayer has obtained on the way (about to the distance) on account of its greater special pace. If this be not the case, the flyer will have to increase somewhat its special pace, but only in so far as $s^1 - s$ becomes larger than d.M.

The pace in steeplechases is limited by obstacles and the ground. The stayer therefore in steeplechases is prevented from fully developing its chief force. The flyer, on the other hand, can make use of the pace necessitated by the ground, which perhaps just corresponds to its special pace, and put on a better speed at the finish. The less the obstacles, the more even the ground, the more advantage there is for the stayer.

In races of such great distances as in the above-mentioned 20 verst race at Moscow, the racing galloping ceases more or less, and the special pace of the stayer as well as of the flyer (*ceteris paribus*, viz., in horses of approximately equal class) becomes pretty equal. For this reason, in case of such unraceable distances, the flyer will very often have the advantage.

The above comparisons apply in general only to horses of approximately

equal class. A horse of the first class, for example, which is at the same time a stayer, may have a greater speed than a horse of the third class which is a typical flyer. In a race between the two, therefore, the latter will not have need to put on his better special pace. In the case of such champions of the course as Gladiateur, Kincsem, Ormonde, Plaisanterie, Isinglass, etc., it will be very difficult, for want of a reliable standard, to decide whether they are stayers or flyers. The best proof as to whether two horses belong to different classes will be found in the fact that one of them can beat the other with the tactics of the stayer as well as those of the flyer. As a rule, I would say that racehorses between whom there is more than a stone belong to two different classes.

3.—*Want of cleverness.* This reproach has a certain justification, as it very likely is possible to still further increase the cleverness of the Thoroughbred by a different method of rearing and other tests. In consequence of their peculiar rearing up, for example, the Steppe horses, or the horses brought up in the Mauerpark of Sababourg (Beberbeck), are certainly superior to the Thoroughbreds in cleverness. It is reasonable to expect and also probable, that the race tests for many generations only on flat, level tracks, may cause neglect of several useful and important qualities of the horse in use (riding horses, school horses, hunters and military horses). To these qualities belong chiefly cleverness, which is best cultivated and tested in steeplechases. But also the shape of the flat racing track may have a favourable influence in cultivating and rewarding cleverness. Quite level and flat tracks, as, for example, those of Newmarket, are not suitable. Of the classical courses which I know, the Derby Epsom course is the most suitable for testing and rewarding the ability to go up and down hills and to pass such sharp bends as are found on very few steeplechase courses. The Epsom Derby course is known as a hard and very reliable test. Its chief value consists in the following:

1. The very strong incline, about half a mile from the start, demands so much from the horse, that roarers, unfit horses, and those of inferior quality and without sufficient stamina, drop out very early or have finished with the last incline before the winning post.

2. The uneven and often varying ground, with its several sharp bends, requires great efforts in the cleverness of the horses.

3. A one-sided capacity does not avail. Such a one-sided capacity might exist, for example, in the special cleverness to climb up a hill well; it is possible over-built horses with strong hind quarters might excel here. Or, again, such a one-sidedness might enable them to go better down hill, which shows a better developed fore part than hind part. Finally, this—at Epsom unavailing—one-sidedness might be a too long galloping-stride (Galoppsprung). It is possible that this too long galloping-stride results from a conformation that has not the necessary symmetry, which enables the horse to adapt in time the pace to an uneven ground and to sharp corners. This

lack of symmetry would be less troubling on a level and straight course like Newmarket; perhaps it should even be of some use.

In the breeding of Half-breds, Steeplechasers have often been used with good results. In Beberbeck, The Colonel, twice winner at Liverpool, has produced well, and from him are derived the good and strong limbs which, through Optimus and Obelisk (the dams of which were daughters of Colonel) one often finds in Trackehnen. The number of Steeplechasers which have been successful in English Thoroughbred breeding is indeed very small. The best known example is Touchstone's grand-dam, Boadicea (Banter's dam), who, between its seventh and twelfth year proved itself an excellent hunter, and as a 19-year-old produced Touchstone's dam. A great mistake in all propositions for steeplechases both here and abroad is that geldings have to carry 3 to 5 lbs. less weight, instead of having to carry 5 lbs. more. Such classical steeplechase races as the great Liverpool National should only be for colts and fillies, weight for age. Then also steeplechases would supply more useful sires. Everybody who has seen the Grand National steeplechase at Liverpool, run over a distance of 7,200 metres, with its 32 jumps, of which each is a great performance, and who could admire the 11-year-old Manifesto coming in as a victor for the second time among 28, and 19 starters, carrying 12 stone, 7 lbs., will at once admit that such a performance is just as imposing as a Derby victory, and the only thing to be regretted is that Manifesto, like many other steeplechasers, was a gelding. The mare Empress by Royal Blood, who ended her career as a steeplechaser as a winner of the Grand National Steeplechase in 1880, produced still 9 good foals, among them in 1889 Red Prince by Kendal, winner of the Lancashire Handicap Steeplechase, one of the best known sires in Irish Hunter breeding, and an ideal mating stallion for Half-bred mares.

The value of steeplechases as a breeding test depends on the kind of track. Steeplechase tracks like Auteuil are less suitable for testing breeding stock, because the kind of obstacles and the ground there admit of nearly the same pace as in flat races, besides, the distance, according to the observations just made, is too long to be a useful test for flat racing. Steeplechase courses like Auteuil ruin the material more than difficult tracks like Liverpool, for example. Perhaps this accounts for the fact that the same horse (Peter Simple, Abd-el-Kader, The Colonel, The Lamb, Manifesto) has won and obtained places more than once in the Liverpool Grand National, whilst only one horse (Wild Monarch, won 1878 and 1879) has done the same feat in the Auteuil great steeplechase. An obstacle course which has to be used also for the test of breeding material, ought to consist of difficult obstacles, and varying, if at all possible, uneven fields with sharp corners. The distance ought to be in proportion to the topography and soil, about 6,000 metres, with a run in of at most 500 metres. Obstacles as well as the ground should prevent an uninterrupted flat race pace, and admit at most only of a good hunting gallop up to the distance (the finish), which,

of course, must admit of a real struggle in the best pace, just as in a flat race. Such tracks would, of course, demand a much more careful preparation for riding and jumping than is the case at Auteuil. Whoever buys the winner of the great Auteuil steeplechase hoping to get a good hunter will very likely be deceived. Horses who have chanced to win on such tracks as I have just described, must be so far prepared that they are always well in hand and always willing to suit their pace to the ground. They must be very carefully jumped, so that they may be able to get over large and various obstacles safely at the required pace and without giving too much away. Finally, after having surmounted the last obstacle, they must still have enough speed left for the final struggle. A test over such a course is, naturally, different to a test on the flat. The latter will certainly measure more correctly the galloping capacity, whilst the former makes more demand on the cleverness, docility, temperament, successful training, and, finally, on the speed of the horse. All these qualities have great influence in the practical breeding of horses, especially of military horses. I consider it an advantage that on such courses so-called flyers have a greater chance of winning than stayers, especially as the flyers are more symmetrically built, and have more energy than the stayers. It is very noteworthy and interesting that the development of a great speed over short distances requires a horse to be symmetrically built. One will find more often amongst stayers high-legged and narrow horses with upright shoulders and straight pastern than amongst flyers. Moreover, we do not here speak about flyers which are only very quick over 500 metres, but about such which, carrying 80 kilos, after a gallop of 6,000 and more metres, and over about 30 different jumps, still retain enough energy, force and breath to be able to put on enough speed to succeed in the final struggle. These are not only performances worthy of recommendation, but they are also guarantee for characters, which are especially valuable for all noble Half-breds.

Unfortunately, such steeplechases, so important as tests of breeding stock, are becoming more and more scarce, especially where bookmakers exercise much influence on racing propositions, like they do in England, even for flat racing propositions (many handicaps and short selling races). It is very clear that the special trainers are afraid of the work and preparation necessary for horses for such steeplechases, especially as very few of them are sufficiently conversant with it. This work belongs particularly to gentlemen riders, and here Germany is probably on top. This work will also cultivate the love and knowledge which are essential to the future breeder of Thoroughbreds and Half-breds, and, finally, this work will produce and animate the love of sport and the daring which soon disappears in long periods of peace, and without which every people would soon decay. The further spread and reserve of steeplechases, especially for gentlemen riders or officers, might also prevent a modern return of the times of ancient Greece and Rome, in which slaves did the fighting and dancing, whilst the Grand Seigneurs looked on and applauded.

4.—*Faulty and too light fundament.* This reproach, unfortunately justified, is the weak point in the whole Thoroughbred breeding. Every Half-bred breeder knows how difficult it is to improve by the infusion of Thoroughbreds the important fore-legs, and any rider who knows the Thoroughbred outside the racecourse will confirm that the galloping capacity of the same is a greater one than the fundament will stand. Whoever has ridden Steppe horses will know what good fore-legs can stand. In this respect, next to the Steppe horse come the Irish Half-breds. We have seen in Germany several such Irish Half-breds on our steeplechase courses. Certainly they broke down now and again, but they were put right and won races again, and they did performances on three legs which a classical Thoroughbred can very seldom perform. As typical examples of these kinds of performances, let me mention the following Thoroughbreds and Half-breds:—Red Nob (Half-bred) 1866 by Neville, Et Cetera 1884 by Town Moor, Teviot 1886 by Marden or Lucebit, Gardenia 1888 by Reveller, Handy Andy (Half-bred), Sixpence 1889 by Man-of-War, Balrath (Half-bred) 1893 by Alban, Sportsman (Half-bred) 1894 by the Dethroned, Scotch Moor 1895 by Town Moor.

It is fairly clear from the observations made in the chapter on weight differences, as well as from the list of horses whose fundament admitted of their successful use on the racecourse up to their eighth year, and even beyond that, that the two-year-old races, and especially those which are run early in the year, may be considered the chief cause of a general retrogression in the capabilities (Leistungsfähigkeit) of the Thoroughbred, as well as of the special deterioration of the fundament. A sequence of the early two-year-old races, as well as of the many early entry closings, is the breaking in of the yearlings, which often takes place in July, and the dangerous trials of same in autumn. The yearlings lose through these causes the benefits of grazing, which really cannot be over-estimated. How much the long-extended grazing influences the production of good fore-legs can best be seen with the Steppe horses and Half-breds in Ireland. It is clear that the movement connected with life on the Steppes, on hard meadows (in summer day and night), produces better, *i.e.*, stronger, dryer and firmer fore-legs than the 2 hours' training and the 22 hours' rest in the stable of the yearlings. Besides, the American training method, to keep them in motion twice daily, and to give them plenty of walking exercise, seems in this respect to be very effective, especially as it avoids the effeminate treatment which is resorted to in Europe without any advantage whatever. In America in 1893 I thought that the American Thoroughbreds possessed better fore-legs and a more regular walk than our horses, perhaps since then, however, even there the steady increase of races for two-year-olds in the early part of the year (even beginning in January), may also have had a bad influence in this respect. The law which has been in force in France since 1867 that two-year-olds must not be run before the 1st of August is very

reasonable. Unfortunately, this law has been extended since 1907, so that in July also, races may be run for two-year-olds (at most two on each race day), for a prize up to 5,000 francs, for a distance not over 1,000 metres. In Germany, since 1905, the 2nd of June has been fixed as the earliest date for two-year-old races. The above particulars on changes in weight differences seem to prove that the few two-year-old races not run too early in the year have had a favourable effect on Thoroughbred breeding. Yet I believe that the complete elimination of two-year-old races would be the best means to improve Thoroughbred breeding, and especially to improve the fundament. As long, however, as the bookmakers and their following are so powerful as they have been hitherto, a change will scarcely be possible in England in this respect. One may expect the unfeeling energy necessary to carry out such a trenchant rule, together with prudence and careful work, only in France and Germany. In Germany, first of all, one might attain an improvement by forbidding two-year-old races before the 1st of September, and also to offer the best prizes for four-year-olds and older horses, for distances of 2,000 or 2,400 metres.

If one, however, objects to this, the fact that most classical winners of about the last fifty years are derived from dams who ran and won as two-year-olds, the question seems to be justified, as to whether these dams have produced so well, in spite of, or in consequence of, the two-year-old tests. Those fillies as well as colts which can stand the two-year-old race tests are, especially if they come out as winners, without doubt by nature the best and hardest horses, and can therefore produce well in spite of two-year-old races. That the two-year-old races are a good thermometer as to hardness, health, and quality of young horses can be taken for granted, just as surely as we can accept their directly injurious influence. Besides, these young horses, through their early training, lose benefits which nothing can replace, such as the one year's grazing, which is especially useful for the whole constitution, and more particularly the fundament. Moreover, against the fact that most classical winners are derived from dams which have also run as two-year-olds, we have the other fact, which I have discussed above, that horses with prominent performances at great ages, as well as the champions of steeplechases, are derived in the majority from stallions and dams which did not run as two-year-olds. If two-year-old races are altogether abolished, I would recommend, and especially for countries in which grazing is interrupted by a long winter, to break in the yearlings late in the autumn, to work them well through the winter, and to send them again as two-year-olds in the summer to grass.

5.—*Want of capacity for carrying heavy weights.* I do not consider this reproach justified. The statement so often heard that horses carried heavier weights formerly is only correct in so far as the so-called King's Plates are concerned, in which five and six-year-olds and older horses were tested under great weights up to 12 stone, mostly for 4 miles with heats.

Besides, in the 11 King's Plates, the never beaten Eclipse carried, for example, as a five and six-year-old, in its remaining 8 races, only 8 or 9 stone. In the second half of the nineteenth century 8 stone, 7 lbs. was the usual weight for four-year-olds. The weights of the Derby, of the St. Leger, and the Oaks, have been increased by 1 stone since their inauguration. In the first races for two-year-olds (1780) the weight for colts was 7 stone, 9 lbs., and in the first classical races for two-year-olds (1786), 8 stone, 2 lbs., against 9 stone of to-day. In Germany the Derby weight is the highest, namely, 58 kilos. Then follows England with 57.15 kilos. France and Austria with 56, America and Russia with 54.9. A greater weight than 58 kilos for three-year-olds in classical tests does not seem to be desirable, especially as the danger to the legs would thereby be increased without obtaining any advantages. A great mistake, however, are the feather weights, which are still usual in England in many handicaps and selling races. English earnest hippologists have often tried to do away with this, but the power of the bookmaker has always prevented it.

6.—*Nervousness, difficult temperament, and bad use of food.* I only mention this altogether unjustified reproach on account of completeness. If a chronometer must go as well as it ought to, you must handle it in a proper manner, and the same thing applies to the Thoroughbred. The worse and more unreasonable the rider, the less is he suited to handle a capable Thoroughbred. The Thoroughbred demands only a reasonable, not a tender treatment, and no good Thoroughbred can bear, for example, to stand a whole day or longer in the stable. In right hands, the Thoroughbred is neither nervous nor difficult, and uses his food better than any other race of horses, especially when it works hard. The above reproach is a characteristic judgment of people who do not know the Thoroughbred thoroughly, and who cannot distinguish the racehorse in training from the Thoroughbred in use.

On account of the above observations, I make the following proposals :—

1. Forbid two-year-old races before the 1st of September, also under 1,000 metres.

2. Regulate distances for three-year-olds and older in breeding races to 1,600—2,400 metres.

3. Establish well-endowed races for four-year-olds and older for 2,000-2,400 metres.

4. Lay out flat races over uneven ground with sharper turnings than is usual in Germany up to now, after the model of Epsom.

5. Arrange steeplechases as breeding races for four-year-olds and older colts and fillies on courses with great obstacles, varying and uneven ground and sharp turnings, for 4,000—6,000 metres, with age weights for gentlemen riders.

6. Abolish all races under 1,000 metres, all handicaps for two and three-year-olds, all hurdle races, and the so-called Biedenweg rules.

7.—Abolish the early entry closings, as they lead to too early trials, put heavy taxes on breeders, and are the cause that good horses often cannot run in important races.

8. Increase breeders' rewards, so that more breeders may participate in the earnings of races, and increase the interest in the breeding of hardy yearlings.

If, however, the representatives of Thoroughbred breeding will decline to reorganise the race trials in the above-described or a similar manner, and will persist in going on as they have done up to now, and if, further, as is unfortunately the case in England, the influence of bookmakers and other business people should increase in the framing of racing propositions, the proud words, "*pro republica est dum ludere videmur,*" will soon be no longer true as regards race tests. Half-bred breeders will then be forced to apply to their own breeding the care and expense which has been the cause of the origin of the Thoroughbred, and they will be forced to demand from their own breeding stock those tests of performances which have made the Thoroughbred so capable. In other words, Half-bred breeders will themselves have to produce a sort of Thoroughbred. Of course, that is a long way off, and several generations will have to work before that standard can be reached to which the Thoroughbred of to-day has attained.

II.

Heredity.

CHAPTER I.

General Observations on Heredity.

THE most important and difficult work of the breeder is the mating of brood mares. It is acknowledged that the breeding of horses is more difficult than the breeding of our other domestic animals. Darwin contends that only few people have an idea what an amount of natural capacity, and how many years' practice are necessary, to become an expert breeder of pigeons. How much more difficult, more complicated, and above all, how much more wearisome, is horse breeding! Judging from the results of mating, not only many years' practice, but also a sharp eye and an impartial consideration are essential. Besides the breeding material and the soil which are at the disposal of the breeder, mating and the manner of rearing are the fundamental factors in horse breeding. Even if we have to acknowledge that the first work, namely, mating, is the more difficult part, yet, on the other hand, the mistake which most frequently occurs, not only in the breeding of horses, but also of our other domestic animals, is that one expects everything from the sire and its mating, and omits to give that care to the rearing without which, even with the wisest mating and the best breeding material, nothing great is produced. The breeder's eye must be able to distinguish what is due to the mating and what is due to the rearing with respect to the soil.

We do not know any general rules or laws indicating which characters are generally or mostly transmitted by the sire and which by the dam. The former doctrine that the sire usually transmits the forequarters and the dam the hindquarters is not correct. Even if there are sires who nearly always transmit certain parts of the body or intellectual characters, there are, on the other hand, dams who generally transmit the same characters. There does not exist a fixed regularity of transmission, either on the part of the dam or on that of the sire. Generally, other things being equal, both dam and sire have the same proneness to transmit the peculiar characters of their body and temperament down to the minutest particular. Also, they may transmit, more or less, qualities which they do not themselves possess, but which (as Darwin contends) one of their ancestors as far back as the twelfth generation possessed.

Transmission works like the memory—often far distant, unimportant matters are recalled, often nearer and more important ones are passed over. In physiological psychology they speak of a muscular memory, even of a memory of matter. The supposition that transmission is also somewhat determined by the memory of the germ plasm is in the same manner justified. In contrasting, for example, different growths of the real and grafted picea, pungens, argentea, one can distinctly see how memory acts in transmission, as the ingrafted branch, remembering too much its position and duty on the mother tree, does not therefore attain that regular straightness which distinguishes its mother type, and which only can be produced by grafting with the top shoots.

Even if both parents generally take equal shares in transmission, yet in every instance different combinations of the mutual heritages will arise. This is the consequence of the results of the fights which are fought out between mutual heritages in the segmentation nucleus (fertilised egg). And these results cannot always be foreseen, and often change. The innumerable combinations which are thus possible are the cause of the different fine shades of individuality and, finally, also of variations.

In the Goos tables we find many examples of dams which had conspicuously cleverer sons than daughters, and *vice-versa*. There have also been many stallions whose transmission differed in the same way, for example, Stockwell and Newminster were distinguished principally on account of many good sons, while Melbourne and King Tom produced more good daughters. This peculiarity in transmission often continues through many generations, as, for example, through Melbourne to Wizard and Odoardo, down to the Half-bred stallion Optimus, which excelled very conspicuously through having better daughters than sons. In Trakehnen, the Journey-mares excelled in their splendid produce, whilst the daughters of Venezuela succeeded very seldom. On the other hand, Venezuela's sires were much better than the sons of Journey.

Sexual characters are also transmitted in the same equal manner by the sire and dam. Stallions which fertilize badly, for example, also produce dams which conceive badly, and bad covering stallions also produce dams which come badly and seldom in heat. Even the qualities to produce twins are not transmitted by the dams only, but also by sires descending from families where twins have often been born. Sunflower, born 1813, for example, descended on its mother's side from a family in which there had never been twins up to its foundation mare, Layton, Barb Mare (fam. 4). But her sire, Castrel, was own brother to Bronce, winner of the Oaks 1806, who produced twins four times, and transmitted this quality several times, down to Rigolboche, sire of the Derby winner Cremorne, and even later. Sunflower also produced twins, and transmitted this quality to four consecutive generations, and perhaps still further. In this case we must suppose that her sire, Castrel, transmitted this quality. It was the same case with

Crystal (born 1851 by Pantaloon), who was inbred to Castrel, and Selim, her dam, to Rubens and Selim, produced twins twice, again transmitting this quality, yet no ancestor on her mother's side ever had twins.

If a dam M. has produced by a sire B. a prominent sire product M.I., and with several other sires less good dam products have been produced, the retention of the blood of the dam M. by her son M.I. is to be recommended, as his daughters, if well done, are taken as brood mares to the stud. They will transmit the best part of the blood of dam M. improved by B. It is therefore not absolutely necessary, in order to preserve the blood of a well-proven dam, to breed always from her direct daughters. The same purpose is attained—a generation later—by breeding from the daughters of her son. The correctness of this procedure stands and falls, of course, with the generally acknowledged doctrine that sire and dam, all things being equal, take equal share in the transmission.

The equal value of sires and dams in transmission is contrary to the doctrine of Bruce Lowe, *i.e.*, that certain breeding characters (Running and Sire families) are for several generations always transmitted by the dams. It can be seen already from this that the breeding theory of Bruce Lowe, from the Figure system, is untenable. In any case, Bruce Lowe over-estimates the effective power of transmission which a good brood mare can maintain for following generations, notwithstanding the consequent influence of other blood. If the Bruce Lowe theory that there are special Sire and special Running families were true, the transmission power of dams must be totally different to that of sires, and that is not the case. Besides, Bruce Lowe has not figured out the Sire-families in the same way as the Running-families, but has estimated them without figures. In the book published in 1901 by W. Allison, "The British Thoroughbred Horse," he gives on page 101 the number of stallions which have been produced by each family as sires of classical winners. The families according to that are as follows :—

Family 3 with 72 stallions.
,, 1 ,, 50 ,,
,, 2 ,, 40 ,,
,, 11 ,, 34 ,,
,, 12 ,, 32 ,,
,, 6 ,, 31 ,,
,, 8 ,, 30 ,,
,, 14 ,, 30 ,,
etc.

It is therefore quite evident that the Bruce Lowe Sire-families (3, 8, 11, 12, 14) are totally different to those ascertained by figures. Besides, the above table shows that the great difference affirmed by Bruce Lowe does not exist between Sire and Running-families. The three best Running-families, 1, 2 and 3 (which according to Allison, 1901, range 1, 3, 2), are, according to

the above table, also the three best Sire-families, and the two Running-families, 1 and 2, are, as regards the production of sires, far superior to Bruce Lowe's Sire-families, 8, 11, 12 and 14. Even the outside family 6, is just as good as the celebrated Sire-family 12, and better than the Sire-families 8 and 14. Thereby the affirmed difference between Running and Sire-families is wanting. Moreover, this fact gives, if looked at from a special point of view, an interesting figure proof of the above contention that both parents, sire and dam, have an equal influence on their progeny. If the Bruce Lowe doctrine were true, then in the case of the present day race-horses of about the 25th generation, the one foundation mare ought to have a greater influence than the other about 17,000,000 ancestors, and she ought to be able to seal her Sire or Running-character on her family. Very interesting—if it were true!

In the figure estimate of the different families as regards the production of classical winners in Running-families, as well as of sires of classical winners in Sire-families, we must take into consideration that a classical winner can only be counted once, or at most three times, according as it has won one or three classical races. A sire of classical winners, however, can be counted one to about seventeen times, according as he has produced one or seventeen classical winners. Stockwell, for example, is sire of three Derby winners, six St. Legers, one Oaks, four 2,000 Guineas, and three 1,000 Guineas winners—altogether seventeen classical winners. As a winner in the 2,000 Guineas Stakes and in the St. Leger, Stockwell is marked with two numbers in the running quality of family 3, and with seventeen numbers in the sire quality of the same family. A classical winner can only obtain number three for the running quality of his family, but for the sire quality he can, like Stockwell, obtain seventeen or even a higher number. This shows distinctly that the value of the figures which determine the quality of Running or Sire-families cannot be taken as a standard. Statistical comparisons of the figures which represent the classical winners and of those which represent the sires of classical winners, are, therefore, not justified, and lead to wrong conclusions. The followers of the Bruce Lowe doctrine, when judging of the pedigree of a prominent racehorse whose sire does not come from a Sire-family, surmount this obstacle by saying that perhaps the best sire blood was brought by the sire of the mother or by the sire's sire. This does not, however, reconcile itself with the fundamental idea of the contended transmission of sire or running qualities only through the dam's side. The proportion of running, sire, and outside families changes in the pedigree of a horse with every generation so much that the value of a horse differs according to the generation which is taken as a basis. According to one's wish, one could, from this point of view, judge a horse favourably or unfavourably. According to Chamant, for example, the proportion of sire and outside families changes as follows :—

			Running-family.	Sire-family.	Family 3.	Outside family
II. Generation,	2	Ancestors.	1	—	1	—
III. ,,	4	,,	2	—	1	1
IV. ,,	8	,,	3	2	1	2
V. ,,	16	,,	4	3	1	8
VI. ,,	32	,,	9	6	4	13
VII. ,,	64	,,	19	12	5	28
XVII. ,,	65,536	,,	737	1,439	†	63,363

† The number of Family 3 is to be similarly added to the Running and Sire-families.

If Chamant had produced badly, one could have made the excuse that he had, in the second and third generation, more running blood than sire blood. If he produces well, it is evident from the seventeenth generation (or even earlier) that he has more sire blood than running blood. These different ways of judging horses are indeed always possible for our present day horses, but not for the three foundation sires of the English Thoroughbred, for Eclipse, a marvel on the racecourse, had, just like Herod, who between the age of 5 to 9 years won in 6 races, no running blood whatever in his pedigree, whilst Matchem, who between the age of 5 to 10 years won in 10 races, can show very little running blood (only family 4) and no sire blood at all in his pedigree. All this ought to be sufficient to show how untenable Bruce Lowe's breeding theory with the number system is. Even if cleverness in the grouping of figures and diverse statistical tables often seem to support the Bruce Lowe theory, one only needs to be reminded that figures prove anything, and often give very remarkable answers to foolish or unjustified questions. With the same justification we could also divide the blood of the sires into Running and Sire-families. Bruce Lowe's breeding theory, with its figure system, belongs to those errors which are fairly harmless, with this advantage even, that breeders now trouble themselves more with the pedigree of the breeding material than formerly. Charles Richardson ("The English Turf," page 227) rightly settles the whole Bruce Lowe doctrine by saying : "I had some thought of criticising this figure system theory, but, never seriously taken up by breeders, it is already a dead letter, succumbing through sheer inanition."

The influence of sires and dams on their progeny varies in reality from the fact that the sires are, on the average, more important representatives of their race than the much more numerous dams can ever be. It is, therefore, to be assumed that the sires will oftener imprint their individuality than the dams. From this point of view can be explained the justification and the especial value of the tables of breeding sires in the male line, as I have shown in the tables which follow. The recognised Goos tables in the female line up to the respective foundation dams are pre-eminently suitable for the correct judgment of Thoroughbred dams. The breeding tables of brood mares, com-

piled according to the families on the dam's side, in the same manner as the Thoroughbred dams in the Goos tables, are used to serve this purpose in the stud books of the Royal studs at Trakehnen and Beberbeck. In these tables all dams which have produced nothing great are left out. The classical winners in the Thoroughbred tables correspond to the Royal stud and country stallions. As in all breeding of animals, by far more female than male animals are necessary, the stallions will on an average excel the brood mares in quality. The chief thought expressed in the Goos tables, as well as in the tables just mentioned in the stud books of Trakehnen and Beberbeck, is therefore based on the claim that a division of the blood on the mother's side may also take place. Through it the practical breeder will obtain an easy means to judge rightly and quickly the chances of a good heredity in every single instance, and the investigator obtains an easy survey and insight in transmission affairs. It is a mistake, therefore, to conclude that the dam has a greater influence on the progeny than the sire, whilst from the above, it only follows that a good or prominent mare has more, *i.e.*, more favourable influence, than a mare of less value, and that it is therefore important to use as good a dam as possible. It is taken as a matter of course that the stallion is good, especially as he can be more easily obtained, *i.e.*, for a single covering, than a good mare.

CHAPTER II.

The Transmission of Acquired Characters.

THE ingenious Darwin theory of natural selection in breeding has latterly been much attacked. Critics, however, have not yet substituted it by anything better. The development of the genus horse is a proof of the Darwin theory. The destruction of the unfit is, according to Darwin's theory, easy to prove. The creation of the fit, which he speaks of, is explainable by the transmission of acquired characters, without it, it remains an enigma. The controversy as to the transmission of acquired characters seems to me to have become a war of words, just like the controversies about pure breeding, constancy and individual prepotency. The opponents of the doctrine of the transmission of acquired character admit that those acquired characters of the body, which when acquired influence also the germ cells, or, to speak more correctly, the corresponding so-called "determinants" of the germ cells, can be transmitted. The question therefore arises, which of the characters acquired by the body do not influence at the time when they are acquired corresponding these germ cells? The above opponents admit also the effects of climate and food, for example, on the body and on the germ cells and the transmission of characters thus acquired. The transmission of immunities has also been proved by Tizzoni, for example, in the case of raby-proof rabbits and tetanus-proof mice, and by Ehrlich, in the case of rizin and abrin-proof mice. Mares which have suffered from severe glanders and got over them seem, as far as my observations at Beberbeck and Trakehnen go, to transmit a certain immunity. Of course, it is possible that this transmission of immunities by the dam is deceptive, and has only been transmitted to their progeny by the milk of the dam. I have never been able to prove that sires transmit such immunities.

All characters acquired by the body exercise an irritation through the acquirement. We must, therefore, assume that the germ plasm nourished by the body, and thus connected with the same, is subject to every such irritation, even if only in a very small degree. The cutting off the tail, as in the case of dogs, very likely produces an irritation of the germ cells, which is, however, not strong enough, and not of such a kind that transmission

without a tail follows. The cutting off the tail in the case of dogs belongs, as a matter of fact, just as little to acquired characters as the circumcision of Jews; both are changes made from the outside, not acquired characters. Only irritations which for a long time and regularly, especially in early years, have led to the acquirement of certain characters, as, for example, the trotting training of Trotters, which commences when they are weaned foals, will be able to influence the corresponding "determinants" of the germ cells in such a manner that a favourable aptitude for the characters acquired from the parents is more or less transmitted. Thus is explained the transmission of changes produced by the continuous influence of ground. The best example for this which I personally know is the previously mentioned change of the Percherons in the Russian Government Stud, Derkul (Government Charkow), which was caused by the Steppes, and transmitted. Darwin has especially emphasised the great influence which ground, climate, food and manner of living exercise on the complete organism of animals in every kind of breeding. Important changes in the breeding stock may be effected by changes in the mode of living, which breeders can bring about. Practical horse breeding is based on these important and fundamental truths, and reckons with the transmission of many acquired characters. To these belong first of all, health, power, hardiness, habits, action, and the construction of the skeleton, combined with the action and changed by certain exercises. For example, the firmly established and early begun galloping exercises of the Thoroughbred have transformed the previous more curved hind legs into more straight ones, and the less developed withers into prominent ones. On the other hand, the trotting exercises have, in the course of several generations, produced straighter pasterns, longer middle, and flatter withers. Likewise the more upright shoulders of the draft horse, so suitable for drawing heavy loads, have been produced by degrees and transmitted in consequence of constant practice in drawing heavy loads through many consecutive generations. The deformation of the skeleton, which the Frenchman, De Gasté, takes to be the result of exorbitant trotting exercises, consists for the most part in a prolongation of the ilium, a stunting of the ischium, and the diminution of the shoulder angle.

Foals from parents which have been harnessed in their youth are more easily broken to harness than foals from parents which have never been harnessed. It is more difficult to break in for riding foals the parents of which have not been ridden or very little than those from parents which have been ridden for a long time. This is most noticeable in the case of breaking in young horses for jumping. In Trakehnen the brood mare Pirna, probably in consequence of an accidental opportunity, had accustomed herself not to be fastened up, or if she were fastened up, to get loose by cunning or force. Pirna transmitted this quality to several of her progeny. In the celebrated stud Palo Alto (California), October, 1893, I noticed as a very remarkable thing in the meadows that the foals of Trotters, unlike foals of

Thoroughbreds, nearly always trotted, if they were urged on by a handkerchief or whip. There was only one foal which galloped more than trotted, and that foal was the product of a Trotter stallion out of the Thoroughbred mare Satanella. As is well known, the Americans liked until recently to infuse Thoroughbred blood into their Trotters. The stallion Palo Alto and mare Maud S. are the best examples of this experiment. Briefly, the transmission of habits and faculties is in horse breeding a fact provable by many examples, and the most important means for the improvement of the breeds.

As Darwin has proved by many examples, however, not only habits and cleverness are transmitted, but all those characters which are acquired by continuous exercise of the same and according to the effect of the acquirement they may either injure or benefit the breed. In the following are given a few examples showing that the explanation of progress or retrogression in breeding by variation and selection alone seems to be insufficient.

In August, 1906, in Trakehnen, among the two-year-old fillies which were destined to become brood mares, the following ten fillies, by reason of their ancestry and conformation, were put to training for the Half-bred breeding races 1907 in Königsberg:—

1. Ackerdrossel by Pomp and Achtbare by Optimus.
2. Lautenspielerin by Geheimrat and Laute by Lehnsherr.
3. Leibeigene by Pomp and Leibrente by Optimus.
4. Poesie by Geheimrat and Poststrasse by Lehnsherr.
5. Art by Pomp and Argolis by Elwin.
6. Jutizrätin by Geheimrat and Justicia by Passvan.
7. Julisonne by Greif and Julia by Orcus.
8. Hohkönigsberg by Pomp and Hohle by Apis.
9. Lore by Pomp and Louisa by Elfenbein.
10. Heimatlose by Pomp and Heidenelfe by Elfenbein.

If we consider the three different Thoroughbred sires (Pomp, Geheimrat, and Greif) of the above ten fillies of equal value, we should have, first of all, to judge the sires of the dams of these ten fillies in order to rightly estimate, by reason of the ancestry of the mares, their racing chances. If we believe in the transmission of acquired characters, we must assume that the two Half-bred sires, Optimus and Lehnsherr, both of which were brought up in the Mauer Park of Sababurg, near Beberbeck, had there acquired better faculties for going, hardiness, and stronger heart and lungs, and all things being equal, ought also to have transmitted these characters better than the stallions Orcus, Apis, Elwin and Elfenbein, which were brought up in Trakehnen, and therefore had less chance of exercise and galloping from their earliest youth. Looked at from this standpoint, the merit of the ten fillies in the last autumn trial, 1906, was about in the same order as shown by the above table. The last four were soon after taken away from race training. In the summer, 1907, Nos. 5 and 6 were the slowest. Finally there only remained the four

grand-children of Optimus and Lehnsherr. On account of influenza in Trakehnen, in July, 1907, we were unable to send any horses for racing to Königsberg. The race took place, therefore, on the 20th July, 1907, at Trakehnen, and there the four fillies passed the post in the same order as above list.

The well-known American Trotter, Mambrino Chief (II.) by Mambrino Paymaster, had already been used as a stallion for breeding of Trotters before he was trained for trotting races. He produced badly, however, and his progeny were not able to win any trotting races. Mambrino Chief was then trained several years for trotting, and afterwards transmitted so well the faculty for trotting that he became one of the most favourite trotting sires in Kentucky.

We can find many similar examples of this in horse breeding, and it would be somewhat artificial to explain this striking fact by variation and selection alone. Above all, time necessary for variation and selection is wanting. It is also unjustifiable to explain by variation and selection alone the retrogressive movement in Thoroughbred breeding—as illustrated above —as a consequence of the many and early two-year-old races. The deterioration of the fundament of the Thoroughbreds, which increases slowly from generation to generation, remains a puzzle without the transmission of acquired characters. Selection will, for all that, always try to avoid horses with bad fundament as much as possible, and a bad fundament can scarcely be considered as a necessary accompaniment of variation, which produces at the same time racing capability in early youth. The fact that racehorses possessing such a good fundament that they still win flat races as eight-year-olds and older are mostly derived from parents which did not run as two-year-olds can, without a transmission of acquired characters, only be explained if a good fundament were an obstacle for successful racing as two-year-olds. On the contrary, we find in the above tables (pages 108—141) many examples proving that horses which did not run as two-year-olds, but up to their eighth year and older, successfully produced progeny which distinguished themselves as two-year-olds on the racecourse. Dr. Syntax, for example, ran and won between the age of 3 and 12 years, and produced from several mares which had not run as two-year-olds, two-year-old winners, amongst them the celebrated Bee's Wing. How is it, then, that the reverse happens so much more seldom? All these and similar occurrences can be much more easily and more naturally explained if we accept the theory of transmission of acquired characters.

In the history of Thoroughbred breeding, one may give as an example for the transmission of acquired characters, the fact that many Orientals which were imported into England after Godolphin Arabian, *i.e.*, after 1730, did not inherit the capability for running in the same measure as the children and grand-children of Godolphin Arabian (Cade and Matchem), or as the descendants of the already earlier imported Byerly Turk, Darley Arabian,

and many others. In spite of the less weights which were accorded to the offspring of Oriental parents in several races (in the Goodwood Gold Cup, for example, 36 lbs.), the later imported Orientals could not compete any longer against the progeny of the earlier imported ones. On the other hand, the offspring of Herod, Highflyer and Eclipse were given in many races extra weights of about 3 to 5 lbs., as a contrast to the offspring of Matchem and Conductor, as descendants of Godolphin Arabian, who was later imported than Byerly Turk (foundation sire of Herod and Highflyer) and Darley Arabian (foundation sire of Eclipse). In consequence of the transmission of acquired characters, the heritage, with respect to racing capability, has slowly increased. The other explanation of this fact, *i.e.*, by variation and selection, is, if we consider the few generations and the not too numerous individuals coming into consideration for selection in which the difference of transmission was already distinctly recognisable, somewhat artificial, unless we suppose that the variation of the germ plasm has been at least guided by the acquired characters of the body. Finally, the followers of Weissmann's theory may say that it is not the acquired characters of the body which have guided the formation or variation of the germ plasm, but that the activity necessary to acquire new characters had a direct influence on the germ plasm. In my opinion, the whole controversy about the transmission of acquired characters seems to terminate on this or that wrangling.

The belief in the transmission of acquired characters is for the breeder the chief stimulant to diligent and well-considered work. Without this belief there would be a great danger of breeding material being neglected. The breeder would have much less pleasure in his work once the most interesting part of stud work disappeared.

CHAPTER III.

The Doctrine of Constancy and Individual Prepotency.

There has been much dispute over the question as to how surely the characters of breeding stock, and especially the just-mentioned changed characters of same, are inherited. With the exception of a few extravagant, short-lived doctrines (as, for instance, that of Buffon), the unimportant deviations of the different doctrines from one another are just as remarkable as the great disagreements of the doctrinaires. Even in ancient Greece, about 300 years B.C., Aristotle taught in his celebrated work, *Historia Animalium*, if somewhat less thoroughly than it is taught to-day, the same theory of constancy and even individual prepotency, just as later the professor of the Vienna veterinary school, Johann Gottlieb Wollstein (born 1737), and his eminent disciple the Imperial Stud Inspector, Johann Christoph Justinus (died 1824), did. The doctrines of the old Justinus (Allg. Grundsätze zur Vervollkommung der Pferdezucht, Wien 1815), which are considered classics still at the present time, have been later partly rearranged more precisely but at the same time have been impaired by von Weckherlin, H. v. Nathusius and Settegast. There are often only wordy wars, and doctrines expressed carelessly and regardless of correctness, causing a long book war. It is difficult to decide who was the original author of the doctrine of individual prepotency. Of course, the teachers of the present time have the advantage of regarding these questions from the pedestal of the latest biological researches, and they are therefore enabled to give to these questions more precise and more explicit answers, which, above all, are scientifically better founded.

Heredity in horse breeding is all the more sure, *i.e.*, all the more corresponding to the purpose of horse breeding; in short, is more constant the longer the line of ancestors which has been trained in serviceable management to acquire the intended performance, and which has been favourably tested. Of course, the word " constant " admits progress in the intended capabilities, and only designates the constant direction of the breeding. H. V. Nathusius calls the products of capable parents " highly bred." According to this the

above sentence could be summed up as follows: The heredity in horse breeding is all the more constant the more highly bred ancestors are found in the pedigree of both parents. In so far as in so-called pure breeds a guarantee is given that their ancestors are highly bred, the above sentence could also be read: The heredity is all the more constant the purer the breed is bred. Purity of breed is, of course, not meant in the zoological sense, as H. V. Nathusius requires. According to this we could not call the Merinos, with their obscure origin, and not even the present day Thoroughbred, pure bred. The purity of breed coming here into consideration does not only require a pure pedigree, as recorded in the stud book, but also the proof of a rational rearing, as well as of sufficient performances of their respective ancestors. For example, Thoroughbred breeding would lose every prospect of success if breeding material were used which had been pampered without training and tests, especially if it is continued for several generations. Such breeding stock would not transmit constantly in the sense of their breed, but by transmitting their own acquired characters, consisting in effeminacy and lack of capabilities, they would transmit a character opposed to the object of breeding, *i.e.*, they would not transmit constantly in the sense of their race. In natural breeds, as, for example, Steppe horses and Arabs in their own homes, purity of breed, as regards pedigree and capabilities, is guaranteed more or less by local conditions and especially by natural selection in the fight for life. The surer this guarantee is the more can one rely on a constant heredity of these natural breeds. In every breed where the method of management is irrational, at first the intended capabilities disappear, afterwards constant heredity, and finally, after several generations, more or less the so-called zoological attributes, *i.e.*, the breed degenerates. The exclusive attention paid to a recorded pure pedigree (and as long as it is possible of the just-mentioned zoological attributes, without taking into consideration the performance, which really is the base of all) has, with the aid of unreasonable shows, already ruined many formerly capable breeds, as, for example, the Suffolks, the Cleveland Bays, and in recent times perhaps also a part of the Clydesdales.

Every sensible breeder of Thoroughbreds or Trotters can obtain from the stud book and race calendar the necessary information for the correct judgment of the breeding stock from which he may expect a constant heredity, *i.e.*, one which serves the purpose. In the breeding of Half-breds judging is, of course, somewhat more difficult, as there are no race calendars, but it is just as necessary, and will generally be based on the manner of rearing and the condition of the soil. In recent times some stud books of Half-breds give some information, as they record especially the brood mares which have received prizes at shows. These horses which have been rewarded at shows cannot generally be recommended when breeding for performances. There are horses which, for example, according to their

pedigree, are pure Trakehners, but having been irrationally reared (perhaps they have not been taken to grass, or had not sufficient exercise), they cannot be taken as pure-bred Trakehners. That breeding with such stallions in Trakehnen cannot lead to good results, therefore cannot have a constancy, in spite of so-called purity of breed, is *a priori* probable, and I have experienced it myself at Trakehnen. The performances and other characters required in every kind of horse breeding are much surer of being transmitted the longer the line of ancestors which have been bred on favourable soil in connection with a rational method of raising, as well as of the selection of the most capable stock for breeding. By improving the soil and other things, the intended characters of the products can also be improved. The heritage, which in this way becomes more valuable, is the cause of progress in all kinds of breeding. Neither Justinus nor the other old teachers of the doctrine of constancy have ever believed in unchangeable breeds in the sense of the progress of their performances.

The chances of success in crossing different breeds depend on the compatibility of the most important characters which the two breeds possess, and on the possibilities of realising the new breeding form aimed at by crossing and its performances to be produced. Unreasonable wishes will remain wishes here, as everywhere else. Cross breeding, even if it otherwise miscarries, acts on fertility and good constitution just as favourably as fresh blood. The best example of a successful cross breeding in the history of horse breeding is the mixing of the American Trotter and Thoroughbred. The chief characters of Trotters and Thoroughbreds which are required to be combined are hard sinews and bones, well developed lungs, strong heart, action, and healthy nerves. Coarse crosses of either English or Oriental Thoroughbreds on Draft breeds may be prominent products well adapted to certain practical uses, but not to breeding. Darwin writes about cross breeding and its success as follows : "The possibility to form different breeds by cross breeding has been very much exaggerated. Certainly many cases are known which prove that a breed can be modified by an occasional crossing of certain individuals carefully chosen, and which possess an intended character. It would, however, be very difficult to produce a new breed which would represent a good average of two different breeds or kinds. Sir J. Sebright has made special experiments in this respect, but without success. The progeny from the first crossing of two pure breeds is, as I have found in the case of pigeons, fairly, and sometimes extraordinarily, alike in character, and everything seems to be simple. If one, however, pairs these crossbreds for a few consecutive generations, scarcely two of their progeny will be alike, and one gets a clear idea of the great difficulty of success."

There are breeds which are not related to each other, but which pursue the same purpose and have attained approximately the same results. According to what I have just said, there would be no objection to the mixing

of such breeds. On the contrary, such a mixing, especially with a breed which ranks higher, on account of performance, would act favourably as an infusion of new blood, *i.e.*, it would tend to favourably influence constitution, energy, vigour and fecundity. Such mixings between the Thoroughbred and the different noble breeds in all parts of the world have taken place with good results. The use of Thoroughbred sires in the Steppe breedings of Russia has led to very good results. Arabian and Persian stallions have produced well in the East Prussian Military Studs. In the same way also, the mixing of a military horse bred perhaps in Australia, and possessing the necessary characters, with the East Prussian horse breed, would probably have good results. On the other hand, however, it seems to me that a mixing of the Russian and American Trotters would be very precarious, not on account of the various blood which predominates in these two breeds, but on account of their very different training, caused by different race propositions. The manner of rearing these two Trotting breeds is just as different as their conformation. The characters of the American Trotter, trained for the mile, cannot be so easily mixed with the characters of the Russian Trotter, trained for longer distances. These two breeds are not of equal value regarding the kind of their performances, they possess different forms, and cannot therefore be classed as of wholly equal breed. The mixing of the same would not be an infusion of fresh blood, but almost a cross, with all its dangers, but yet not without prospects for a final success after long and systematical breeding.

In every breeding, may it be ever so pure, and may the rearing of its progeny be ever so rational, one will always find individuals which transmit the desired breed characters particularly well, and, on the other hand, individuals which transmit them badly. The ability of breeding stock to transmit the characters desired in the case of every breed in a prominent manner is called individual prepotency. Sires as well as mares may have a special individual prepotency, even when (if only exceptionally) they do not themselves possess in a prominent manner the character which they prominently transmit. On the other hand, there are sires and dams which, although themselves possessing in a high degree the desired breed characters, transmit the same very seldom or not at all. There have been Thoroughbreds which belonged to the best on the course, as, for example, the two champions of the racecourse, Cotherstone and Gladiateur, and yet their progeny performed little or nothing at all. I have known horses with excellent hocks, and again others with a splendid action, nevertheless, their progeny was noted for bad hocks, or a bad action. Of course, this lack of transmission is not the rule.

One of the most important tasks of the breeder will be to get prominent sires with special individual prepotency. Whether those individuals which excel by new formations of nature (according to Darwin's single variation)

are—as Settegast says—endowed with a special individual prepotency, is a question which, as far as horse breeding is concerned, cannot as yet be definitely answered. In any case, male products in horse breeding are more prone to take on individual variations than female products. The aggregate of filly yearlings is therefore always more equal than that of colt yearlings. Of course, one will naturally prefer to use stallions with individual variations or modifications which appear favourable for the purpose of breeding, and to establish and make the greatest possible use of these characters by inbreeding. It is possible that generally such stallions are specially endowed with individual prepotency.

CHAPTER IV.

Inbreeding.

THE investigations of scientists in biology and transmission have made, not only in Germany, but also in other civilised countries, especially in England and America, most considerable progress. Numerous regularly appearing periodicals have lately been created regarding this subject, amongst which is one that is especially worthy of notice appearing in England since 1901 under the name of "Biometrica" (Professor Pearson), in which—as the name already indicates—all mathematically tangible phenomena of biology and transmission are discussed. Laws of inbreeding are, however, to my knowledge, neither formulated in our country, nor in the just-mentioned "Biometrica." It appears to me the reason is that the material for such investigations in animal breeding is available to a sufficient extent only for the English Thoroughbred breeding, and this field is, unfortunately, up to the present not wholly familiar to the scientists. Even the book by Davenport ("Principles of Breeding"), published in America, 1907, which gives many very interesting insights into the mathematically-expressed laws of transmission, leaves somewhat to be desired in its chapter on inbreeding. From the Thoroughbred of to-day are already known 20 to 25 generations of their genealogy. We could therefore make their pedigrees, with 1 to 17 millions of ancestors, whose abilities and capabilities are to be seen in the racing calendars since 200 years. It shows how enormous is the material we possess in the Thoroughbred, and that it is without equal in any other breed!

Common ancestors constitute the basis of inbreeding. By "free generations" is meant the number of generations between the common ancestors and the sire on the one side, and between the common ancestors and the dam on the other side. In the following example of Stockwell, the common ancestor, Orville, is removed from the dam, Pocahontas, by two generations, and from the sire, The Baron, by three generations. Therefore the common blood of the basis, Orville, must altogether run five generations before entering the blood of Pocahontas and The Baron. From this is derived the

term "five free generations." It can also be seen from the same example that Waxy and Penelope form the basis of a different inbreeding with six free generations, three on each side. We further can notice that The Baron himself has four free generations to Waxy and four free generations to Penelope, and accordingly supports or increases the inbreeding of his son Stockwell on the same basis.

Stockwell

Pocahontas	Marpessa	Clare	Harpalice	Amazon
				Gohanna
			Marmion	Y. Noisette
				Whiskey
		Muley	Eleanor	Y. Giantess
				Whiskey
			Orville	Evelina
				Beningbrough
	Glencoe	Trampoline	Web	**Penelope**
				Waxy
			Tramp	Gohanna Mare
				Dick Andrews
		Sultan	Bacchante	Mercury Mare
				Williamson's Ditto
			Selim	Alexander Mare
				Buzzard
The Baron	Echidna	Miss Pratt	Gadabout	Minstrel
				Orville
			Blacklock	Coriander Mare
				Whitelock
		Economist	Floranthe	Caprice
				Octavian
			Whisker	**Penelope**
				Waxy
	Birdcatcher	Guiccioli	Flight	Y. Heroine
				Escape
			Bob Booty	Ferne
				Chanticleer
		Sir Hercules	Peri	Thalestris
				Wanderer
			Whalebone	**Penelope**
				Waxy

If sire and dam come from the same stallion (mating of brother and sister), that is an inbreeding with 0 free generation, and when it happens that a stallion is sire and grand-sire on the dam's side, that is to say, when he produced a foal out of his own daughter, that is an inbreeding with —1 free generation. In fixing the number of free generations, no notice is taken to which side they are allotted. On the other hand, in giving the number of removes, it is seen at once how many free generations are on the dam's side and how many on the sire's side. For instance, Stockwell is inbred to Orville in the fourth and fifth remove. It is usual in this designation to count both parents, commencing with the dam. It seems to me, however, improbable that finer shades in the laws of inbreeding can be detected by the help of removes than by that of free generations. I personally have not succeeded. In making these attempts, one is apt to run into the danger of getting together certain interesting geometrical groups, and to shape out fanciful and imaginary things, and in this way lose sight of the real facts.

I myself know of no law of breeding which can be settled or confirmed by the system of removes.

Both parents, as well as all ancestors, have heredity shares on the offspring. The question now arises how great is the share of each of them. The second generation consists of two parents, both of which possess equally great shares. To each of the parents may be therefore ascribed half. Now the question arises how much of this half each parent individually transmits, and how much of it he transmits as mediator of his ancestors. The heredity share coming from each parent must therefore be considered to consist of two parts which—as is shown at once—must be equally great. At first a still unknown fraction e is supposed to be the individual heredity share of one parent. Both parents therefore individually possess 2 e shares, and figure as mediators of the remaining part $1 - 2e$, which is ascribed to the total of the ancestors. Thereby follows the demand that the fraction e is also valid for all former generations. Accordingly the four grand parents have the share $2e \cdot 2e = 4e^2$, the eight great grand parents $2e \cdot 2e \cdot 2e = 8e^3$ etc. The total heritage will thus be represented by:

$$2e + 4e^2 + 8e^3 + 16e^4 - \ldots \ldots = 1. \quad \text{———} 1.)$$

in which the 1 figures as the entire heritage. The value of this series quickly decreases until they soon become infinitesimal. From the above equation 1) one can eliminate 2 e and write instead:

$$2e(1 + 2e + 4e^2 + 8e^3 - \ldots) = 1 \quad \text{———} 2.)$$

As the value contained in brackets near the 1 is equal to the series in equation 1), it follows by substitution $2e(1 + 1) = 1$, therefore $e = 1/4$ ———3.)

Thereupon follows that each parent individually transmits only the half of its total heritage, while the other half, also = 1/4, is transmitted on the offspring by each parent as mediator of all his ancestors. This is known in England as the so-called Galton's law of ancestral heredity. But whether and in what manner Galton has furnished a mathematical proof of it is unknown to me.

Table I. gives a scheduled classification of the heredity shares for 10 generations, and Table II. the same in a lucid pedigree form. One sees that not quite 1-millionth represents the heredity share of an ancestor in the tenth generation. As it is inconvenient to count with fractions, one can multiply all numbers by 262144. Thereby the heredity unity is the share of an ancestor in the tenth generation, accordingly $= 1 = 2^0$ and the heritage of the offspring equals $262144 = 2^{18}$. The last column in Table I. shows the heredity share of the various generations. One sees that each higher generation has the half of the share of the preceding one. Below is shown the total of all generations up to and including the tenth. If one adds the remaining heritage of the still further removed generations of 512 the whole heritage of the offspring $= 2^{18}$ is obtained.

TABLE I.

Generations.	Removes.	Quantity of blood or Heredity shares of the offspring and of the ancestors of the generations.					
		Offspring = 2^0		Offspring = 2^{18}		Offspring = 2^{18}	
I.	0	1	= 2^0	262144	= 2^{18}	262144	= 2^{18}
II.	1	$\frac{1}{4}$	= 2^{-2}	65536	= 2^{16}	131072	= 2^{17}
III.	2	$\frac{1}{16}$	= 2^{-4}	16384	= 2^{14}	65536	= 2^{16}
IV.	3	$\frac{1}{64}$	= 2^{-6}	4096	= 2^{12}	32768	= 2^{15}
V.	4	$\frac{1}{256}$	= 2^{-8}	1024	= 2^{10}	16384	= 2^{14}
VI.	5	$\frac{1}{1024}$	= 2^{-10}	256	= 2^{8}	8192	= 2^{13}
VII.	6	$\frac{1}{4096}$	= 2^{-12}	64	= 2^{6}	4096	= 2^{12}
VIII.	7	$\frac{1}{16384}$	= 2^{-14}	16	= 2^{4}	2048	= 2^{11}
IX.	8	$\frac{1}{65536}$	= 2^{-16}	4	= 2^{2}	1024	= 2^{10}
X.	9	$\frac{1}{262144}$	= 2^{-18}	1	= 2^{0}	512	= 2^{9}
					Total =	261632	
					Remaining heritage =	512	
					Offspring =	262144	= 2^{18}

The question is now to find for the different inbreedings a measure for their effect in transmission, *i.e.*, the inbreeding amount. From a simple mathematical consideration it follows—as is shown below—that the inbreeding amount cannot be in any case a total, *i.e.*, also not equal to the transmitted quantity of blood, or what is the same, equal to the total of heredity shares of the basis of inbreeding. These quantities of blood are not at all the same for the same number of free generations, but change very much according as the removes are allotted to the two sides of the pedigree. From Table III. one sees, for instance, that in the case of 6 free generations = totalling 10 removes, the quantities of blood transmitted by the basis of inbreeding increase from 512 to 65,537, while—as may be here mentioned in anticipation—the product of the heredity shares remains equally great, *i.e.*, $2^{16} \cdot 2^{0} = 2^{14} \cdot 2^{2} = 2^{12} \cdot 2^{4} = 2^{10} \cdot 2^{6} = 2^{8} \cdot 2^{8} = 2^{16}$, therefore independent of the different removes in the case of immutable free generations (for information see Table II.).

If a^1 and a^{11} represent the heredity shares of the basis of inbreeding, and $J_{1,2}$ the corresponding inbreeding-amount, it follows that

$$J_{1,2} = F(a^1, a^{11}) \qquad 4.)$$

If a^1, or a^{11} becomes infinitesimal—*i.e.*, in the case of far removed inbreeding—it follows that $J_{1,2}$ also becomes infinitesimal or 0, although the quantity of blood as such remains existing but not operating as inbreeding. It is therefore certain that

$$F(a^1, a^{11}) = a^1 + a^{11} \qquad 5.)$$

is no equation.

TABLE II.

Offspring = 2^{18} = 262144															
Dam = 2^{16} = 65536								Sire = 2^{16} = 65536							
2^{14} = 16384				2^{14} = 16384				2^{14} = 16384				2^{14} = 16384			
2^{12} = 4096		2^{12} = 4096		2^{12} = 4096		2^{12} = 4096		2^{12} = 4096		2^{12} = 4096		2^{12} = 4096		2^{12} = 4096	
2^{10} = 1024	2^{10} = 1024	2^{10} = 1024	2^{10} = 1024	2^{10} = 1024	2^{10} = 1024	2^{10} = 1024	2^{10} = 1024	2^{10} = 1024	2^{10} = 1024	2^{10} = 1024	2^{10} = 1024	2^{10} = 1024	2^{10} = 1024	2^{10} = 1024	2^{10} = 1024
2^{8}	2^{8}	2^{8}	2^{8}	2^{8}	2^{8}	2^{8}	2^{8}	2^{8}	2^{8}	2^{8}	2^{8}	2^{8}	2^{8}	2^{8}	2^{8}
2^{6}	2^{6}	2^{6}	2^{6}	2^{6}	2^{6}	2^{6}	2^{6}	2^{6}	2^{6}	2^{6}	2^{6}	2^{6}	2^{6}	2^{6}	2^{6}
2^{4}	2^{4}	2^{4}	2^{4}	2^{4}	2^{4}	2^{4}	2^{4}	2^{4}	2^{4}	2^{4}	2^{4}	2^{4}	2^{4}	2^{4}	2^{4}
2^{2}	2^{2}	2^{2}	2^{2}	2^{2}	2^{2}	2^{2}	2^{2}	2^{2}	2^{2}	2^{2}	2^{2}	2^{2}	2^{2}	2^{2}	2^{2}
2^{0}	2^{0}	2^{0}	2^{0}	2^{0}	2^{0}	2^{0}	2^{0}	2^{0}	2^{0}	2^{0}	2^{0}	2^{0}	2^{0}	2^{0}	2^{0}

Table III.

Quantities of blood or Heredity share totals of two ancestors together if

Quantity of blood of one ancestor.	In the case of Removes.	Offspring $= 2^{18} = 262144$ and Heredity share of one ancestor of the 10th generation $= 2^0 = 1$.								
$2^{16} = 65536$	1	—	81920	69632	66560	65792	65600	65552	65540	65537
$2^{14} = 16384$	2	81920	32768	20480	17408	16640	16448	16400	16388	16385
$2^{12} = 4096$	3	69632	20480	8192	5120	4352	4160	4112	4100	4097
$2^{10} = 1024$	4	66560	17408	5120	2048	1280	1088	1040	1028	1025
$2^{8} = 256$	5	65792	16640	4352	1280	512	320	272	260	257
$2^{6} = 64$	6	65600	16448	4160	1088	320	128	80	68	65
$2^{4} = 16$	7	65552	16400	4112	1040	272	80	32	20	17
$2^{2} = 4$	8	65540	16388	4100	1028	260	68	20	8	5
$2^{0} = 1$	9	65537	16385	4097	1025	257	65	17	5	2
In the case of Removes		1	2	3	4	5	6	7	8	9
Quantity of blood of one ancestor ...		65536	16384	4096	1024	256	64	16	4	1

The simplest function which fulfils the condition that $J_{1,2}$ becomes 0 if a^{I} or $a^{II} = 0$ reads as follows:

$$J_{1,2} = a^{I} \cdot a^{II} \qquad \text{———— 6.)}$$

in words: The inbreeding amount equals the product of the heredity shares of the basis. Accordingly Table IV. is constructed. The unity to be chosen is an arbitrary one, as a unity to be absolutely described is unconceivable. The heredity shares are powers to 2, therefore their product also indicates in powers to 2 the inbreeding amount. Accordingly, not the quantity of blood, but the inbreeding amount as settled by the free generations, is the effective agency which asserts the influence of the common ancestor in memory and in transmission with the power of the inbreeding amount. From the number of free generations, one can calculate at once the inbreeding amount F as

$$F = 2^{2(f_1 - f)} \qquad \text{———— 7.)}$$

in which f_1 = that number of free generations to which the inbreeding amount is supposed = 1. One can convince oneself of the exactness by regarding the values in Table IV., for instance according to column iii., therefore $f_1 = 6$. It follows in case of

2 free generations: $F = 2^{2(6-2)} = 2^{8} = 256$

6 free generations: $F = 2^{2(6-6)} = 2^{0} = 1$

Accordingly the free generations are a practical and simple means for the calculation of the inbreeding amounts.

TABLE IV.

Inbreeding amount in the case of

Free Generations.	Total of Removes.	I. †S. of the 10th generation = 2^0 Offspring = 2^{18} = 262144		II. †S. of the 7th generation = 2^0 Offspring = 2^{12} = 4096		III. †S. of the 6th generation = 2^0 Offspring = 2^{10} = 1024		IV. †S. of the 10th generation = 2^{-18} Offspring = 2^0 = 1	
-1	3	2^{30}	1073741824	2^{18}	262144	2^{14} =	16384	2^{-6} =	$\frac{1}{64}$
0	4	2^{28}	268435456	2^{16} =	65536	2^{12} =	4096	2^{-8} =	$\frac{1}{256}$
1	5	2^{26}	67108864	2^{14}	16384	2^{10} =	1024	2^{-10} =	$\frac{1}{1024}$
2	6	2^{24}	16777216	2^{12}	4096	2^{8} =	256	2^{-12} =	$\frac{1}{4096}$
3	7	2^{22}	4194304	2^{10}	1024	2^{6} =	64	2^{-14} =	$\frac{1}{16384}$
4	8	2^{20}	1048576	2^{8}	256	2^{4} =	16	2^{-16} =	$\frac{1}{65536}$
5	9	2^{18}	262144	2^{6} =	64	2^{2} =	4	2^{-18} =	$\frac{1}{262144}$
6	10	2^{16}	65536	2^{4}	16	2^{0}	1	2^{-20} =	$\frac{1}{1048576}$
7	11	2^{14}	16384	2^{2}	4	2^{-2} =	$\frac{1}{4}$	2^{-22} =	$\frac{1}{4194304}$
8	12	2^{12}	4096	2^{0} =	1	2^{-4} =	$\frac{1}{16}$	2^{-24} =	$\frac{1}{16777216}$

†S. = Heredity share of one ancestor (see Tables I. and II.).

There is yet a broad and uncultivated field before us for further mathematical considerations. I will here only point out that if the basis of inbreeding occurs oftener than twice in the pedigree the inbreeding amount cannot be equal to $a^{1} \cdot a^{11} \cdot a^{111} \ldots$ but is equal to $a^{1} \cdot a^{11} + a^{1} \cdot a^{111} + a^{11} \cdot a^{111} + \ldots\ldots$ for which we can also write :

$$J_{1,2,3} = J_{1,2} + a^{111} \cdot B_{1,2}, \text{ where } B_{1,2} = \text{quantity of blood} = a^{1} + a^{11}.$$

Thereupon we could still establish special values for the inbreeding supports. Another consideration would be necessary for the inbreedings with more than one basis.

In every kind of animal breeding, one has sought and attained improvement and progress by inbreeding to prominent ancestors as a basis. It is evident that the merits of a prominent ancestor have more chance of being transmitted, if this prominent ancestor appears as a basis of an inbreeding, in the pedigree of the product, for the breeding of which the mating is made. If we construct the case theoretically that two animals are mated with each other, which neither in themselves nor in mating with each other, can show any inbreeding whatever, we must ascribe to each separate ancestor of a generation, for example, therefore, to each of the 128 ancestors in the seventh generation, the same possibility and chance of the thorough heredity of its characters. As amongst these 128 ancestors there are very probably several of inferior value, there is just as much probability that the inferior ancestor thoroughly transmits as well as the prominent ancestor. Only on the basis of inbreeding the prominent ancestors is a better chance of transmission to be expected. If all ancestors were faultless and equally prominent, every inbreeding would be dispensable. The inbreeding of any developing breed must necessarily be very close at first. The question now arises how close useful inbreeding shall be to-day, and how often it shall be repeated. Furthermore, on which ancestors as a basis the inbreeding must be founded. Too much inbreeding in Thoroughbreds as well as in Half-breds has often ruined good tribes. In Thoroughbred breeding I recall the too frequent inbreeding undertaken by Lord Derby (9 times with 0, 6 times with 1, and 9 times with 2 free generations) with the daughters of Papillon, dam of the Derby winner Sir Peter. The best part of the female progeny of the celebrated Papillon was ruined by it. Much of the blood of Eclipse has been spoiled by inbreeding too, and we have lost at Trakehnen in the same way, as will be shown later on, a great part of the blood of Thunderclap. Whilst the inbreeding mania of Lord Derby was a distinct fiasco, the breeding of the Duke of Grafton, undertaken almost at the same time, in the reasonable limits of at least 2 free generations, has produced from the valuable blood of Prunella, and her daughter Penelope, the most celebrated family of all Thoroughbreds.

As further examples for the failure of inbreeding with 0 free generation the progeny of following mares will serve :—

1. Sister to Regulus 1743 by Godol. Arabian, with 16 foals, amongst which 6 with 0 free generation.

2. Maid of all Work 1786 by Highflyer, own sister to Cowslip L. and dam of Meteora O.

3. Sister to Parrot 1812 by Walton, with 8 foals, amongst which 4 with 0 free generation.

The progeny of the products with 0 free generation is omitted in Goos' tables. There are yet many other examples in which this exaggerated inbreeding would have had a favourable opportunity to manifest its eventual merit. Its failure is the most plainly recognised through their progeny—as well as in the case of the children of Papillon—not having played the rôle to be assured of a place of honour in the Goos' tables.

There has been also much damaged by exaggerated inbreeding in the American Thoroughbred breeding. Among the many instances of 0 free generation I have not found a single one in the American Stud Book which has been of importance to breeding. I have only found one good racehorse in the American breeding, and that is Henry 1819 by Sir Archy-Diomed (*i.e.*, 0 Diomed), celebrated by his famous match with the American Eclipse in New York, 1823. The sire of American Eclipse—equally prominent on the racecourse as at the stud—was Duroc 1806 by Diomed—Grey Diomed. As Grey Diomed is a noted son of Diomed, Duroc also appears to be bred to Diomed with 0 free generation. The excellent performance of Duroc on the racecourse and at the stud made me sceptical, and exact investigation in the American Stud Book proved to me, therefore, that the aforesaid Grey Diomed is not descended from Diomed, but from Medley, a son of Gimcrack.

A sire as well as a mare may be the basis of inbreeding, but as the stallion will, of course, have a more numerous progeny, his good characters can be recognised much more easily and quickly than those of a mare, especially if she has only produced well by one stallion. Generally, therefore, in mating one will aim at inbreeding to a stallion. As, moreover, in most cases good stallions have produced several good offsprings, whilst most good mares have produced a few good offsprings, it often happens that good mares give place to the nearest good son as a basis for the inbreeding. Good mares will only be able to serve as a basis for an inbreeding in those cases where, as for example, with Penelope, Termagant, Banter, Pocahontas, etc., they, with two different prominent products on each side of the pedigree, determine themselves the closest limit of the inbreeding. The few mares which serve as basis of inbreeding belong to the most prominent. Velocipede's dam, for example, the basis of St. Simon's inbreeding, must be specially mentioned as the mother of 18 foals, of which 9 are mentioned in Goos' tables, a fine performance indeed! But, as will be seen from the above, in most cases the stallion forms the basis of inbreeding.

In order to correctly estimate the most successful inbreedings in Thoroughbred breeding, we have classified the following examples of the best stallions, according to the degree of their inbreeding. We find them :—

With 1 free generation	11 stallions (only 3 or 4 successful)
,, 2 free generations	23 stallions
,, 3 ,, ,,	51 ,,
,, 4 ,, ,,	78 ,,
,, 5 ,, ,,	61 ,,
,, 6 ,, ,,	33 ,,
,, 7 ,, ,,	12 ,,
,, 8 ,, ,,	1 ,,
Total	270 stallions.

The figures of the free generations and the basis of same are given for every stallion indicated and also for its parents. In every case, not only the closest inbreedings, but also the more distant ones, up to 5 free generations, are added. Six and more free generations are only mentioned where no closer inbreedings exist, or where the same appear necessary to give a complete and correct idea of the whole inbreeding.

A clear table of the inbreedings of the best sires and their parents seems to me to be the best means for arriving by nearer critical considerations at practical and useful conclusions. In a few exceptional cases I have added the inbreedings of grand-parents. A more comprehensive consideration of the pedigree of the best stallions, especially of the so-called basis and its inbreeding, may be interesting and also instructive in the case of some horses. I do not believe, however, this way to be suitable for arriving at useful statistical results. I fully appreciate the difficulties of finding the right examples from the whole Thoroughbred breeding. It is certain that I have often overlooked a better stallion and added a worse one instead. Furthermore, as I have also taken into consideration American and Australian Thoroughbred breedings, and have also mentioned the most important representatives of olden times up to Eclipse, a correct selection of stallions has been all the more difficult. I am quite aware that I have mentioned amongst stallions with 1 free generation several less successful, but this was necessary, as otherwise their number would have been too small from which to draw statistical conclusions.

As an interesting example of incest breeding with —1 free generation, I may mention, besides Y. Paragone 1852 by Paragone and Lanterne by Paragone, produced in Germany, and which ran as a three-year-old twice unplaced, also Jigg-of-Jiggs of English Thoroughbred breeding. He was born 1745 by the three-year-old Hunt's Jigg (ran four to ten years of age) out of a mare by Heneage's Jigg, who was the dam of Hunt's Jigg, and was herself bred to a Jigg mare with —1 free generation. This Jigg-of-Jiggs, so closely

inbred, was a good racehorse, ran and won between the age of four and seven, ran as an eight-year-old without winning, and was then used as a stallion for Half-bred breeding. His own brother Heel-and-Toe ran between the age of four and seven without winning.

I have yet found in the General Stud Book Regulus, born 1764, by Regulus out of Sappho by Regulus, with —1 free generation, a moderate racehorse, of whom is asserted that he knocked his hip when in embryo, and that had this not happened he would probably have been much better than his less closely inbred brothers and sisters (see Family 43). In any case, he has been of no importance in Thoroughbred breeding. He was set apart as covering stallion in Richmond in Yorkshire for 3 guineas. As I never found recorded a foal by him, the supposition is that he was infertile.

Among the stallions with 0 free generation the following 13 (up to now I found no more in the General Stud Book) are worthy of mention as good or moderate racehorses:—

1. Silverleg 1743 by Cartouch—Old Cartouch.
   0 Old Cartouch. — 13 h. 3¾ inches = 140,3 cm. of height. Ran and won between the age of four and nine, also in Give and Take Plates, and beat Little Driver.
2. Trap 1759 by Blank—Godol. Arabian.
   0 God. Arabian.
3. Sharper 1700 by Bajazet out of Sister to Regulus.
   0 God. Arabian.
4. Filch 1761 by Bajazet out of Sister to Regulus.
   0 God. Arabian.
5. George 1793 by Dungannon out of Sister to Soldier.
   0 Eclipse. — Sire of 5 unimportant winners.
6. Lucan 1796 by Sir Peter out of Brown Charlotte.
   0 Highflyer.
7. Robin Redbreast 1796 by Sir Peter out of Wren.
   0 Papillon. — Sold as stallion to America and worthy of mention there as grand-sire in the female line of Sumpter, 1818, by Sir Archy.
8. Agonistes 1797 by Sir Peter out of Wren.
   0 Papillon. — Sire of 2 unimportant winners.
9. Cocoa-tree 1797 by Woodpecker—Herod.
   0 Herod
10. Hedley 1802 by Sir Peter out of Maria.
    0 Highflyer. — (Not to be confused with Hedley by Gohanna born 1803).
11. Brown Stout 1804 by Sir Peter out of Brown Charlotte.
    0 Highflyer.
12. Ivanhoe 1817 by Phantom out of Sister to Parrot.
    0 Walton.

13. Cedric D. 1821 by Phantom out of Sister to Parrot.
0 Walton. As a three year old remarkable racehorse, ran nine times, amongst which the Derby. As a five year old was set apart as stud stallion in Lambton Grange, Durham. Have never found recorded a foal by him.

Of the stallions with 0 free generation I only know the following four which have had any influence on Thoroughbred breeding :—

1. Turner's Sweepstakes 1743 by Sweepstakes.
0 Mare by Basto.

He was sire of : 1, Trentham, born 1766 ; 2, Mare, born 1760, Foundation mare in Fam. 8 and dam of Sharper 1788 by Ranthos ; 3, Lady, born 1758, who had 11 foals.

2. Omar 1752 by Godol. Arabian.
0 Godol. Arabian.

He was sire of : 1, Miss Spindleshanks, Fam. 9 ; 2, Nisa, who had 9 foals ; 3, Marplot's dam ; 4, Confidence's dam ; 5, Blemish, who ran and won between the age of three and nine.

3. Babraham Blank 1758 by Babraham.
0 Godol. Arabian.

He is also worthy of note as being the sire of Carbuncle.

4. Milo 1802 by Sir Peter.
0 Papillon.

He was half-brother to the winner of the Oaks, Bellissima, ran and won as a three and four-year-old, and was the sire of many good racers, among which Rosalla, grand-dam of Ithuriel (Fam. 2 d), and Eryx born 1816.

Stallions with 1 Free Generation.

No.	Names of Stallions	Born	Sire	Dam
1	Barcaldine 1 Darling's dam (by Birdcatcher) 5 Touchstone	1878	Solon 5 Whalebone (Grandsire of Birdcatcher and Touchstone) 6 Waxy 6 Penelope	Ballyroe 3 Birdcatcher
2	Delpini 1 Blank 7 Darley's Arabian	1781	Highflyer 5 Sister to Mixbury 6 Darley's Arabian	Countess ?
3	Flying Fox 1 Galopin (by Vedette) 6 Stockwell 7 Pocahontas	1896	Orme 5 Pocahontas 6 Birdcatcher (Grandsire of Stockw.)	Vampire 2 Vedette 6 Birdcatcher

No.	Names of Stallions	Born	Sire	Dam
4	Friponnier 1 Orlando 7 Orville 7 Walton	1864	Chevalier d'Industrie 5 Orville 6 Waxy	Tension 5 Walton 6 Whalebone
5	Highland Fling 1 Herod	1798	Spadille 4 Partner 4 Regulus	Cälia 6 Darley's Arabian 6 Betty Leedes
6	Knight of St. George 1 Sir Hercules 6 PotSos (by Eclipse)	1851	Birdcatcher 5 Woodpecker 6 Eclipse	Maltese 4 Sorcerer 5 PotSos
7	The Miner 1 Birdcatcher 7 Orville 7 Waxy 7 Penelope	1861	Rataplan 5 Orville 6 Waxy 6 Penelope	Manganese 7 Sir Peter 7 Trumpator
8	Ninety Three 1 Herod 6 Flying Childers	1790	Florizel 4 Flying Childers	Nosegay 3 Snap 6 Bartl. Childers
	Orest 1 Touchstone	1857	Orestes 4 Selim	Lady Louisa 4 Waxy 4 Penelope
10	Paulowitz 1 Highflyer 1 Termagant (3 Godol. Arabian) 6 Regulus	1813	Sir Paul 4 Regulus (by God. Arab.) 5 Snip	Evelina 4 Regulus 4 Godol. Arabian 4 Blaze
11	Wellingtonia 1 Pocahontas 2 Touchstone	1869	Chattanooga 4 Whalebone	Araucaria 5 Selim 5 Orville 6 Waxy 6 Penelope

Stallions with 2 Free Generations.

No.	Names of Stallions	Born	Sire	Dam
1	Amphion 2 Newminster	1886	Rosebery 3 Touchstone	Suicide 7 Whalebone
2	Bob Booty 2 Herod 5 Cade (by Godol. Arabian) 5 Squirt (by Bart. Childers)	1804	Chanticleer 5 Godol. Arabian 6 {Fl. Childers Bart. Childers}	Ierne 5 {Fl. Childers Bart. Childers}

No.	Names of Stallions	Born	Sire	Dam
3	Boston 2 Diomed 5 Eclipse 6 Marske (by Squirt)	1833 in America	Timoleon 5 Trentham 7 Squirt	Mare by Ball's Florizel 5 Marske
4	Brutandorf 2 Pot8os 5 Herod	1821	Blacklock 3 Highflyer 4 Herod 4 Eclipse	Mandane 4 Cade
5	Cap à Pie 2 Waxy	1837	The Colonel 3 Highflyer 4 Eclipse 4 Herod	Sister to Cactus 5 Eclipse
6	Cardinal York 2 Herod 5 Regulus	1804	Sir Peter 3 Regulus 4 Godol. Arab. 5 Flying Childers 5 Fox	Charmer 1 Herod
7	Gohanna 2 Tartar (by Partner) 4 Squirt 5 Mogul (by Godol. Arabian) 6 Godol. Arabian 6 { Bart Childers Fl. Childers }	1790	Mercury 4 Godol. Arabian	Mare by Herod 3 Partner 4 { Bart. Childers Fl. Childers }
8	Galopin 2 Voltaire (by Blacklock, and grandson of Phantom)	1872	Vedette 3 Blacklock 6 Walton	Flying Duchess 4 Phantom (by Walton) 6 Pot8os
9	Golumpus 2 Herod (by Tartar) 5 Cade (by Godol. Arabian)	1802	Gohanna 2 Tartar (by Partner) 4 Squirt 5 Mogul 6 Godol. Arabian	Catherine 4 Godol. Arabian 5 Partner
10	Hannover 2 Vandal 7 Emilius (by Orville)	1884 in America	Hindoo 6 Emilius	Bourbon Belle 7 Orville
11	Humphrey Clinker 2 Sir Peter (by Highflyer and out of a Mare by Snap) 4 Trumpator 7 Eclipse	1822	Comus 5 Herod 5 Snap (by Snip) 6 Cade 6 Eclipse	Clinkerina 5 Regulus 6 Snip

No.	Names of Stallions	Born	Sire	Dam
12	Janissary 2 Stockwell 5 Touchstone 5 Melbourne	1887	Isonomy 3 Birdcatcher	Janette 3 Touchstone 6 Bee's Wing's dam
13	Muley Moloch 2 Beningbrough (by King Fergus by Eclipse) 4 Highflyer 5 Eclipse	1830	Muley 4 Eclipse 5 Herod	Nancy 3 Eclipse 4 Herod
14	Orville 2 Herod (by Tartar) 6 Regulus 6 Ruby Mare	1799	Beningbrough 3 Tartar 4 Miss Slamerkin 6 Godol. Arabian	Evelina 4 Blaze 4 Regulus 4 Godol. Arabian
15	Partisan 2 Highflyer (by Herod) 3 Eclipse 4 Snap 6 Regulus	1811	Walton 3 Herod 3 Snap 4 Regulus 6 Partner	Parasol 5 Regulus 6 Godol. Arabian
16	Petrarch 2 Touchstone 7 Selim	1873	Lord Clifden 6 Paynator	Laura 4 Whalebone (Grand-sire of Touchstone) 5 Selim
17	Priam 2 Whiskey 5 Herod 5 Eclipse	1827	Emilius 3 Highflyer 4 Eclipse	Cressida 3 Herod 3 Matchem
18	The Saddler 2 Waxy 4 Sir Peter 5 Highflyer	1828	Waverley 3 Highflyer 5 Matchem	Castrellina 4 Herod 4 Eclipse 5 Highflyer Grand-sire: 3 Herod Grand-dam: 4 Herod
19	Sainfoin 2 Stockwell 6 Touchstone	1887	Springfield 5 Sultan (Grand-sire of Pocahontas) 6 Camel } Parents of 6 Banter } Touchstone	Sanda 3 The Baron } Parents of 3 Pocahontas } Stockwell
20	Le Sagittaire 2 Strathconan (by Newminster) 6 Melbourne	1892	Le Sancy 3 Windhound 3 Alice Hawthorn 5 Touchstone	La Dauphine 5 Touchstone 5 Melbourne

No.	Names of Stallions	Born	Sire	Dam
21	Saltram 2 Regulus 4 { Bart. Childers Fl. Childers } 5 Sister to Old Country Wench 6 Bay Bolton	1780	Eclipse 3 Sister to Old Country Wench 4 Snake	Virago 3 Mare by Basto
22	Sorcerer 2 Matchem 6 Partner	1796	Trumpator 4 Godol. Arabian 4 Partner	Y. Giantess 5 God. Arab. } Grand-sire ol Matchem 5 Partner }
23	Wisdom 2 The Baron 2 Pocahontas 5 Emilius (by Orville)	1873	Blinkhoolie 5 Whalebone 6 Orville	Aline 5 Orville 5 Whisker 6 Whalebone

Stallions with 3 Free Generations.

No.	Names of Stallions	Born	Sire	Dam
1	Australian 3 Whisker (by Waxy and Penelope)	1858	West-Australian 6 Trumpator	Emilia 4 Waxy 4 Penelope (by Trumpator)
2	Beadsman 3 Tramp 5 Orville 7 Buzzard 8 Trumpator 8 Eclipse	1855	Weatherbit 3 Orville 5 Y. Giantess 6 Woodpecker 6 Trumpator	Mendicant 6 Eclipse 6 Alexander 6 Sir Peter 6 Buzzard 6 Mare by Alexander
3	Beningbrough 3 Tartar (by Partner) 4 Miss Slamerkin 6 Godol. Arabian 6 { Fl. Childers Bart. Childers }	1791	King Fergus 5 { Fl. Childers Bart. Childers } 6 Bay Bolton	Mare by Herod 3 Partner 5 Fl. Childers 5 Confederate Filly
4	Blacklock 3 Highflyer 4 Herod 4 Eclipse	1814	Whitelock 3 Herod 3 Eclipse 3 Matchem	Mare by Coriander 1 Pot8os (by Eclipse) 2 Herod 5 Snap
5	Buccaneer 3 Edmund (by Orville) 5 Paynator	1857	Wild Dayrell 4 Selim	Mare by Little Red Rover 4 Beningbrough (Sire of Orville)
6	Buzzard 3 Cade (by Godol. Arabian) 5 Partner 6 Flying Childers 7 Bald Galloway	1787	Woodpecker 6 Darl. Arabian	Missfortune 4 Godol. Arabian 6 Bald Galloway

No.	Names of Stallions	Born	Sire	Dam
7	Cain 3 Highflyer 6 Blank	1822	Paulowitz 1 Highflyer 1 Termagant 6 Regulus (by Godol. Arabian)	Mare by Paynator 4 Rachel (Dam of Highflyer) 5 Blank (by Godol. Arabian)
8	Carbine 3 Brown Bess (by Camel) 5 Touchstone	1885 in Austral.	Musket 4 Touchstone 4 Camel	The Mersey 3 Touchstone 4 Camel
9	The Colonel 3 Highflyer 4 Herod (by Tartar) 4 Eclipse 7 Blank (by Godol. Arabian)	1825	Whisker 3 Herod 4 Snap 6 Cade (by Godol. Arabian)	Mare by Delpini 5 Tartar 5 Blank 6 Regulus
10	Conductor 3 Partner (by Jigg)	1767	Matchem 5 Mare by Spanker	Mare by Snap 4 Partner's dam 6 Byerly Turk (Sire by Jigg)
11	Domino 3 Lexington (by Boston) 7 Glencoe	1891 in America	Himyar 7 Muley	Mannie Grey 2 Lexington Grand-dam 1 Reel (by Glencoe) 2 Boston
12	Eclipse 3 Sister to Old Country Wench (1 Hautboy) by Snake 4 Snake by Lister Turk 6 Hautboy 7 Coneyskins by Lister Turk	1764	Marske 5 Hautboy (Grand-sire of Old Country Wench and Snake) 5 Lister Turk Grand-dam (Ruby Mare) 3 Coneyskins 4 Hautboy	Spilletta 3 Snake 5 Hautboy Grand-dam (Mother Western) 3 Hautboy 5 Brimmer
13	Emilius 3 Highflyer (by Herod) 4 Eclipse 6 Blank (by Godol. Arabian)	1820	Orville 2 Herod 6 Regulus (by Godol. Arabian)	Emily 3 Eclipse 4 Herod 4 Blank

No.	Names of Stallions	Born	Sire	Dam
14	Emperor of Norfolk 3 Glencoe 6 Emilius 6 Tramp 7 Sir Archy	1885 in America	Norfolk 5 Sir Archy 5 Sumpter (by Sir Archy)	Marian 5 Emilius
15	Epirus 3 Sir Peter (by Highflyer) 4 Diomed 5 Herod 5 Eclipse	1834	Langar 4 Highflyer	Olympia 3 Herod
16	Fitz James 3 Touchstone 5 Pantaloon (by Castrel)	1875	Scottish Chief 5 Orville 6 Selim (by Buzzard, Sire of Castrel)	Hawthorn Bloom 6 Muley 7 Buzzard
17	Flying Dutchman 3 Selim 6 Sir Peter (by Highflyer)	1846	Bay Middleton 4 Sir Peter 4 Arethusa	Barbelle 5 Eclipse 5 Highflyer
18	Gallinule 3 Stockwell 5 Touchstone (by Camel) 6 Birdcatcher	1884	Isonomy 3 Birdcatcher (Grand-sire of Stockwell)	Moorhen 7 Selim (Grand-sire of Camel) Grand-sire: 4 Camel
19	Galtee More 3 Thormanby 4 Stockwell	1894	Kendal 4 Birdcatcher (Grand-sire of Stockwell) 5 Pantaloon	Morganette 5 Pantaloon (Grand-sire of Thormanby)
20	Glaucus 3 Sir Peter (by Highflyer) 5 Eclipse	1830	Partisan 2 Highflyer 3 Eclipse 4 Snap (Grand-sire of Sir Peter)	Nanine 4 Highflyer 5 Eclipse
21	Gunnersbury 3 Touchstone (by Camel) 5 Sultan (by Selim)	1876	Hermit 4 Camel 6 Selim	Hippia 3 Sultan
22	Hackler 3 Orlando 5 Melbourne	1887	Petrarch 2 Touchstone	Hackness 3 Orlando
23	Ion 3 Evelina (by Highflyer) 5 Sir Peter (by Highflyer)	1835	Cain 3 Highflyer	Margaret 5 Highflyer

No.	Names of Stallions	Born	Sire	Dam
24	Isonomy 3 Birdcatcher	1875	Sterling 5 Whalebone (Sire of Sir Hercules)	Isola Bella 4 Sir Hercules } Parents of Bird- 4 Guiccioli } catcher Grand-dam: 2 Sir Hercules
25	King Alfonso 3 Glencoe 5 Muley (by Orville)	1872 in America	Phaeton 6 Orville	Capitola 5 Orville
26	Lexington 3 Sir Archy (by Diomed) 6 Saltram (by Eclipse)	1850 in America	Boston 2 Diomed (by Florizel) 5 Eclipse 6 Marske	Alice Carneal 6 Highflyer (by Herod, Sire of Florizel)
27	Lottery 3 Eclipse 4 Woodpecker (by Herod) 4 Trentham 5 Herod	1820	Tramp 3 Eclipse 4 Herod	Mandane 4 Cade 4 { Regulus Sister to Regulus
28	Melton 3 Stockwell 5 Touchstone 6 Bee's Wing	1882	Master Kildare 4 Birdcatcher	Violet Melrose 3 Touchstone 4 Pantaloon Grand-dam: 3 Touchstone
29	Muncaster 3 Birdcatcher 6 Banter	1877	Doncaster 6 Blacklock 7 Whalebone	Windermere 7 Orville 7 Buzzard
30	Orlando 3 Selim (by Buzzard) 5 Alexander (by Eclipse) 6 Sir Peter (by Highflyer)	1841	Touchstone 4 Alexander 5 Buzzard 5 Eclipse 5 Sir Peter 6 Highflyer	Vulture 3 Buzzard } Parents of 3 Mare by Alexand. } Selim 4 Sir Peter
31	Paynator 3 Snap (by Snip) 5 Godol. Arabian	1791	Trumpator 4 Godol. Arabian 4 Partner	Mare by Mark Anthony 3 Godol. Arabian 4 Mare by Basto (dam of Snip)
32	Pero Gomez 3 Lady Moore Carew (by Tramp) 5 Camel	1866	Beadsman 3 Tramp 5 Orville	Salamanca 4 Velocipede
33	Privateer 3 Touchstone 6 Orville	1878	Adventurer 4 Orville	La Favorita 3 Touchstone 6 Orville

No.	Names of Stallions	Born	Sire	Dam
34	Rosebery 3 Touchstone 6 Orville (by Beningbrough)	1872	Speculum 6 Orville	Ladylike 5 Orville 6 Beningbrough
35	St. Blaise 3 Touchstone (by Camel) 6 Whalebone	1880	Hermit 4 Camel (by Whalebone) 6 Selim	Fusee 5 Whalebone 5 Waxy 5 Penelope
36	St. Gatien 3 Newminster 5 Birdcatcher	1881	Rotherhill (or The Rover) 2 Touchstone	St. Editha 3 Birdcatcher
37	Le Sancy 3 Windhound 3 Alice Hawthorn 5 Touchstone	1884	Atlantic 7 Orville 7 Buzzard 7 Mare by Alexander	Gem of Gems 4 Touchstone (Grand-sire of Windhound) Grand-sire: 2 Touchstone Grand-dam: 2 Pantaloon (Sire of Windhound)
38	Selim 3 Herod 5 Matchem (by Cade) 6 Regulus (by Godol. Arabian) [own brother to Castrel and Rubens]	1802	Buzzard 3 Cade (by Godol. Arabian) 5 Partner (Grand-sire of Herod)	Mare by Alexander 5 Regulus (by Godol. Arabian) 6 Godol. Arabian
39	Silvio 3 Birdcatcher 5 Partisan	1874	Blair Athol 6 Whalebone 7 Orville	Silverhair 7 Pot8os 7 Orville
40	Sir Archy 3 Herod 5 Blank (by Godol. Arabian) 7 Childers	1805 in America	Diomed 4 Crab 4 Partner (Grand-sire of Herod) 4 Godol. Arabian 5 Childers	Castianira 6 Godol. Arabian 6 Regulus
41	Sir Peter 3 Regulus 4 Godol. Arabian 5 Flying Childers 5 Fox	1784	Highflyer 4 {Fl. Childers / Bart. Childers} 5 Sister to Mixbury	Papillon 3 {Fl. Childers / Bart. Childers} 4 Bay Bolton
42	Tramp 3 Eclipse 4 Herod	1810	Dick Andrews 4 Blank 5 Regulus	Mare by Gohanna 3 Eclipse 3 Herod

No.	Names of Stallions	Born	Sire	Dam
43	Tibthorpe 3 Mulatto 4 Blacklock	1864	Voltigeur 5 Hambletonian (Grand-sire of Blacklock)	Little Agnes 7 Orville (Grand-sire of Mulatto)
44	Vedette 3 Blacklock 6 Walton (by Sir Peter)	1854	Voltigeur 5 Hambletonian (Grand-sire of Blacklock) 6 Sir Peter	Mrs. Ridgway 6 Pot8os
45	Vertugadin 3 Partisan 6 Whalebone 7 Beningbrough	1862	Fitz Gladiator 5 Sir Peter (Grand-sire of Partisan) 5 Buzzard 5 Mare by Alexander 5 Gohanna	Vermeille 4 Whalebone 5 Orville (by Beningbrough)
46	Walton 3 Snap 3 Herod 4 Regulus 6 Partner	1799	Sir Peter 3 Regulus 5 Fox 5 Flying Childers	Arethusa 3 Regulus 5 Partner (Grand-sire of Herod)
47	Weatherbit 3 Orville 5 Y. Giantess 6 Woodpecker (by Herod)	1842	Sheet Anchor 5 Woodpecker 6 Highflyer 6 Mercury	Miss Letty 1 Orville 6 Herod
48	Whalebone 3 Herod 4 Snap 6 Cade (by Godol Arabian)	1807	Waxy 5 Godol. Arabian 6 Partner (Grand-sire of Herod)	Penelope 3 Snap 6 Partner 6 Godol. Arabian
49	Whitelock 3 Herod (by Tartar) 3 Eclipse 3 Matchem	1803	Hambletonian 4 Tartar (by Partner) 5 Regulus 5 Crab 6 Godol. Arabian	Rosalind 4 Partner Grand-dam: 3 Partner
50	Whisker 3 Herod 4 Snap 6 Cade (by Godol. Arabian)	1812	Waxy 5 Godol. Arabian 6 Partner (Grand-sire of Herod)	Penelope 3 Snap 6 Partner 6 Godol. Arabian
51	Windhound 3 Peruvian 5 Mare by Alexander (by Eclipse) 5 Buzzard	1847	Pantaloon 4 Eclipse 4 Highflyer (Grand-sire of Peruvian) 5 Herod	Phryne 4 Waxy

Stallions with 4 Free Generations.

No.	Names of Stallions	Born	Sire	Dam
1	Abercorn 4 Paraguay (by Sir Hercules)	1884 in Austral.	Chester 5 Sir Hercules 5 Emilius	Cinnamon 4 Sir Hercules
2	Adventurer 4 Orville (by Beningbrough) 6 Stamford (by Sir Peter)	1859	Newminster 5 Beningbrough 5 Trumpator	Palma 1 Orville 4 Sir Peter
3	Arbitrator 4 Touchstone 8 Orville	1874	Solon 5 Whalebone (Grand-sire of Touchstone) 5 Comus	True Heart 5 Orville
4	The Bard 4 Melbourne 7 Defence (by Whalebone, Grand-sire of Touchstone)	1883	Petrarch 2 Touchstone 7 Selim	Magdalene 6 Comus (Grand-sire of Melbourne) 6 Sultan (by Selim) 6 Whalebone
5	The Baron 4 Waxy (by Pot8os) 4 Penelope	1842	Birdcatcher 5 Woodpecker 6 Eclipse 6 Highflyer 6 Herod	Echidna 5 Pot8os 6 Phoenomenon (by Herod) 6 Highflyer (by Herod)
6	Bay Middleton 4 Sir Peter (by Highflyer) 4 Arethusa 7 Eclipse	1833	Sultan 4 Highflyer 4 Herod (Grand-sire of Diomed) 4 Eclipse	Cobweb 3 Y. Giantess (by Diomed) 5 Highflyer 6 Eclipse 6 Herod
7	Bill of Portland 4 Pocahontas 6 Birdcatcher	1890	St. Simon 6 Sultan (Grand-sire of Pocahontas)	Electric Light 3 Birdcatcher 4 Touchstone
8	Bonavista 4 Pocahontas 5 Windhound 5 Alice Hawthorn 7 Touchstone	1889	Bend Or 6 Touchstone (Grand-sire of Windhound)	Vista 4 Banter (Dam of Touchstone) 4 Pantaloon (Sire of Windhound)
9	Cambuscan 4 Whalebone 5 Orville (by Beningbrough) 6 Beningbrough	1861	Newminster 5 Beningbrough 5 Trumpator	The Arrow 4 Beningbrough

No.	Names of Stallions	Born	Sire	Dam
10	Camel 4 Highflyer 5 Herod 5 Eclipse 6 Snap	1822	Whalebone 3 Herod 4 Snap	Mare by Selim 3 Highflyer 4 Herod 5 Eclipse
11	Catton 4 Herod 4 Eclipse 5 Matchem (by Cade)	1809	Golumpus 2 Herod 5 Cade (by Godol. Arabian)	Lucy Gray 3 Herod 6 Godol. Arabian 6 Blank (by Godol. Arabian) 6 Regulus (Grand-sire of Eclipse)
12	Childwick 4 Pocahontas 5 Voltigeur	1890	St. Simon 6 Sultan (Grand-sire of Pocahontas) 6 Velocipede's dam	Plaisanterie 6 Langar Grandsire : 1 Pocahontas
13	Count Schomberg 4 Stockwell 5 Birdcatcher 5 Orlando 5 Touchstone	1892	Aughrim 4 Birdcatcher 5 Sir Hercules 5 Touchstone	Clonavarn 4 Touchstone 5 Birdcatcher
14	Cyllene 4 Stockwell 5 Newminster (by Touchstone)	1895	Bonavista 4 Pocahontas 5 Windhound 5 Alice Hawthorn 5 Pantaloon 7 Touchstone	Arcadia 6 Touchstone
15	Le Destrier 4 Gladiator (by Partisan)	1877	Flageolet 5 Partisan	La Dheune 5 Partisan
16	Dick Andrews 4 Blank (by Godol. Arabian) 5 Regulus 6 Snip (by Fl. Childers)	1797	Joe Andrews 4 Godol. Arabian 5 Bart. Childers	Mare by Highflyer 3 Blank 6 Flying Childers
17	Diomed 4 Crab 4 Godol. Arabian 4 Partner 5 Flying Childers (by Darl. Arabian)	1777	Florizel 4 Flying Childers	Mare by Spectator 5 Darley's Arabian

No.	Names of Stallions	Born	Sire	Dam
18	Dollar 4 Catton 6 Beningbrough 6 Evelina 7 Sir Peter 7 Sorcerer	1860	The Flying Dutchman 3 Selim 6 Sir Peter	Payment 5 Sorcerer 6 Beningbrough
19	Economist 4 Herod 4 Eclipse 5 Highflyer	1825	Whisker 3 Herod 4 Snap	Floranthe 3 Herod 3 Eclipse
20	Energy 4 Sir Hercules 4 Birdcatcher 5 Touchstone 5 Melbourne 6 Bay Middleton (by Sultan)	1880	Sterling 5 Whalebone (Sire of Sir Hercules)	Cherry Duchess 4 Sir Hercules (Sire of Birdcatcher) 5 Touchstone 6 Sultan
21	Fisherman 4 Orville 5 Dick Andrews	1853	Heron 6 Eclipse (Grand-sire of Dick Andrews) 7 Highflyer (Grand-sire of Orville)	Mainbrace 3 Mandane (by Pot8os)
22	Flatcatcher 4 Waxy 5 Sir Peter 6 Eclipse	1845	Touchstone 4 Alexander (by Eclipse) 5 Eclipse 5 Sir Peter	Decoy 2 Sir Peter 5 Eclipse
23	Florizel 4 Flying Childers 7 Byerly Turk	1768	Herod 7 Hautboy 7 Spanker 7 Leedes Arabian	Mare by Cygnet 3 Flying Childers 5 Basto (by Byerly Turk)
24	Galliard 4 Birdcatcher 5 Voltaire (by Blacklock)	1880	Galopin 2 Voltaire	Mavis 6 Blacklock Grand-dam: 4 Blacklock
25	Gladiator 4 Prunella (by Highflyer) 4 Pot8os (by Eclipse)	1833	Partisan 2 Highflyer 3 Eclipse 4 Snap	Pauline 4 Trumpator 5 Pot8os 6 Eclipse 6. Highflyer
26	Gouverneur 4 Touchstone 7 Whalebone (by Waxy and Penelope)	1888	Energy 4 Sir Hercules 4 Birdcatcher 5 Touchstone 5 Melbourne	Gladia 5 Smolensko 6 Waxy 6 Penelope

No.	Names of Stallions	Born	Sire	Dam
27	Hambletonian 4 Tartar (by Partner) 5 Regulus 5 Crab 6 Godol. Arabian	1792	King Fergus 5 { Bart. Childers { Fl. Childers	Mare by Highflyer 4 Godol. Arabian 4 Partner
28	Hamburg 4 Lexington 6 Glencoe	1895 in America	Hannover 2 Vandal (by Glencoe)	Lady Reel 3 Lexington 5 Glencoe Grand-dam: 2 Lexington
29	Hannibal 4 Touchstone 4 Stockwell	1891	Trachenberg 7 Bustard	Zama 3 Touchstone 5 Camel
30	Haphazard 4 Regulus (by Godol. Arabian) 6 { Bart. Childers { Fl. Childers	1797	Sir Peter 3 Regulus 4 Godol. Arabian 5 Fl. Childers 5 Fox	Miss Hervey 4 Godol. Arabian 4 Bart. Childers
31	Hermit 4 Camel 6 Paynator (by Trumpator) 6 Selim 7 Orville (by Beningbrough)	1864	Newminster 5 Trumpator 5 Beningbrough	Seclusion 3 Sultan (by Selim) 7 Orville
32	Joe Andrews 4 Godol. Arabian 5 Bart. Childers (by D. Arabian and Betty Leedes)	1778	Eclipse 3 Sister to Old Country Wench 4 Snake	Amaranda 3 Godol. Arabian 4 Partner 6 Darl. Arabian 6 Betty Leedes
33	Kendal 4 Birdcatcher 5 Pantaloon	1883	Bend Or 6 Touchstone 6 Muley	Windermere 7 Buzzard (Grand-sire of Pantaloon) 7 Orville
34	Kingston 4 Smolensko 5 Sir Peter (by Highflyer) 7 Eclipse	1849	Venison 5 Eclipse 6 Herod	Queen Anne 6 Highflyer
35	Kingston 4 Melbourne 5 Glencoe 5 Touchstone	1884 in America	Spendthrift 5 Emilius 6 Selim (Grand-sire of Glencoe)	Kapanga 6 Blacklock 7 Whalebone (Grand-sire of Touchstone)

No.	Names of Stallions	Born	Sire	Dam
36	Lambton 4 Orville (by Beningbrough) 6 Whiskey 7 Sir Peter	1850	The Cure 6 Sir Peter	Elphine 2 Beningbrough 5 Sir Peter
37	Lanercost 4 Gohanna 5 Woodpecker (by Herod) 5 Highflyer (by Herod) 5 Trumpator 6 Eclipse	1835	Liverpool 4 Eclipse (Grand-sire of Gohanna) 5 Woodpecker 5 Highflyer 5 Trentham 6 Herod	Otis 3 Woodpecker 4 Herod Grand-dam : 2 Herod 3 Eclipse
38	Liverpool 4 Eclipse 5 Highflyer (by Herod) 5 Woodpecker (by Herod) 5 Trentham 6 Herod	1828	Tramp 3 Eclipse 4 Herod	Mare by Whisker 1 Pot8os (by Eclipse) 4 Herod
39	Longbow 4 Orville 7 Highflyer 7 Woodpecker	1849	Ithuriel 5 Buzzard (by Woodpecker) 5 Mare by Alexander	Miss Bowe 5 Highflyer 6 Herod 6 Eclipse
40	Marsyas 4 Waxy 4 Penelope	1851	Orlando 3 Selim 5 Alexander	Malibran 5 Herod
41	Master Kildare 4 Birdcatcher 8 Blacklock	1875	Lord Ronald 6 Whalebone (Grand-sire of Birdcatcher) 7 Blacklock	Silk 6 Blacklock
42	Meddler 4 Newminster	1890	St. Gatien 3 Newminster 5 Birdcatcher Grand-sire : 3 Melbourne	Busybody 5 Venison Grand-sire : 2 Touchstone
43	Melbourne 4 Termagant 5 Highflyer (by Herod) 5 Trumpator 6 Eclipse	1834	Humphrey Clinker 2 Sir Peter (by Highflyer) 4 Trumpator 7 Eclipse	Mare by Cervantes 4 Eclipse 5 Herod

No.	Names of Stallions	Born	Sire	Dam
44	Mercury 4 Godol. Arabian	1778	Eclipse 3 Sister to Old Country Wench 4 Snake	Mare by Tartar 5 Curwens Bay Barb
45	Mortemer 4 Partisan (by Walton) 6 Orville	1865	Compiegne 6 Whalebone 7 Buzzard 7 Mare by Alexander 7 Sir Peter (Sire of Walton)	Comtesse 1 Emilius (by Orville) 6 Sir Peter
46	Muley 4 Eclipse 4 Herod 5 Matchem	1810	Orville 2 Herod	Eleanor 3 Herod 3 Matchem
47	Musket 4 Touchstone (by Camel) 4 Camel	1867	Toxophilite 7 Sir Peter 7 Woodpecker	Mare by West-Australian 2 Camel
48	The Nabob 4 Selim 4 Orville 4 Penelope	1849	The Nob 4 Buzzard } Parents of Selim 4 Mare by Alexander (by Eclipse) } Parents of Selim 4 Prunella	Hester 5 Woodpecker (Sire of Buzzard) 6 Eclipse
49	The Nob 4 Buzzard 4 Mare by Alexander 4 Prunella (by Highflyer) 6 Sir Peter	1838	Glaucus 3 Sir Peter (by Highflyer) 5 Eclipse	Octave 4 Highflyer
50	Nordenfeldt 4 Melbourne 5 Touchstone	1882 in Austral.	Musket 4 Touchstone 4 Camel	Onyx 5 Touchstone
51	Pantaloon 4 Highflyer (by Herod) 4 Eclipse 5 Herod	1824	Castrel 3 Herod 5 Matchem 6 Regulus	Idalia 2 Highflyer 3 Eclipse 6 Regulus
52	Phantom 4 Herod 4 Eclipse 5 Snap	1808	Walton 3 Herod 3 Snap 4 Regulus	Julia 3 Herod 3 Matchem

No.	Names of Stallions	Born	Sire	Dam
53	Phönomenon 4 Blaze	1780	Herod 7 Leedes Arabian 7 Hautboy 7 Spanker	Frenzy 4 Godol. Arabian
54	Plenipotentiary 4 Sir Peter (by High-flyer) 5 Highflyer 7 Eclipse	1831	Emilius 3 Highflyer 4 Eclipse	Harriet 4 Highflyer 6 Eclipse
55	Plutus 4 Emilius (by Orville) 6 Selim	1862	Trumpeter 4 Selim 5 Orville 5 Penelope	Mare by Planet 3 Sultan (by Selim)
56	Pot8os 4 Godol. Arabian	1773	Eclipse 3 Sister to Old Country Wench 4 Snake	Sportsmistress 5 Ancaster Turk
57	Rayon d'Or 4 Touchstone	1876	Flageolet 5 Partisan	Araucaria 5 Orville 5 Selim
58	Rosicrucian 4 Priam 5 Whalebone 7 Selim [own brother to The Palmer]	1865	Beadsman 3 Tramp 5 Orville (Grand-sire of Priam) 7 Buzzard	Mad. Eglentine 4 Phantom 6 Buzzard
59	Royal Hampton 4 Pocahontas 6 Touchstone	1882	Hampton 7 Whalebone (Grand-sire of Touchstone)	Princess 4 Sultan (Grand-sire of Pocahontas) 5 Whisker
60	Saphir 4 Pocahontas 6 Touchstone 6 Gladiator 7 Emilius	1888	Chamant 5 Emilius 6 Orville	Sappho 6 Touchstone Grand-sire: 2 Pocahontas Grand-dam: 4 Touchstone
61	Sir Hercules 4 Eclipse 5 Herod 5 Highflyer 7 Snap	1826	Whalebone 3 Herod 4 Snap	Peri 3 Eclipse 5 Herod
62	Sir Hercules 4 Waxy (by Pot8os) 4 Penelope	1843 in Austral.	Cap à Pie 2 Waxy	Paraguay 4 Pot8os

No.	Names of Stallions	Born	Sire	Dam
63	Sir Paul 4 Regulus (by Godol. Arabian) 5 Snip (by Fl. Childers)	1802	Sir Peter 3 Regulus 4 Godol. Arabian 5 Fl. Childers 5 Fox	Pewett 3 Regulus 4 Godol. Arabian 6 Fl. Childers Grand-dam: 3 Godol. Arabian
64	Smolensko 4 Herod 5 Snap 6 Cade (by Godol. Arabian)	1810	Sorcerer 2 Matchem (by Cade)	Wowski 1 Herod 3 Snap 5 Godol. Arabian
65	Sultan 4 Herod 4 Highflyer (by Herod) 4 Eclipse	1816	Selim 3 Herod 5 Matchem	Bacchante 3 Herod 3 Eclipse
66	Sweetmeat 4 Walton (by Sir Peter) 6 Pot8os 7 Highflyer	1842	Gladiator 4 Pot8os 4 Prunella (by Highflyer)	Lollypop 0 Blacklock 6 Sir Peter (by Highflyer)
67	Touchstone 4 Alexander (by Eclipse) 5 Eclipse 5 Sir Peter (by Highflyer) 5 Buzzard 6 Highflyer	1831	Camel 4 Highflyer 5 Eclipse 5 Herod	Banter 4 Eclipse
68	Tranby 4 King Fergus 4 Highflyer 5 Herod	1826	Blacklock 3 Highflyer 4 Eclipse 4 Herod	Mare by Orville 3 Herod 4 Eclipse
69	Trappist 4 Camel	1872	Hermit 4 Camel 6 Selim (Grand-sire of Camel)	Bunsh 4 Lottery
70	Trumpator 4 Partner 4 Godol. Arabian 5 Brown Farewell	1782	Conductor 3 Partner	Brunette 4 Partner

No.	Names of Stallions	Born	Sire	Dam
71	Trumpeter 4 Selim 5 Orville 5 Penelope	1856	Orlando 3 Selim 5 Alexander	Cavatina 4 Buzzard 4 Mare by Alexand. } Parents of Selim 4 Beningbrough 4 Evelina } Parents of Orville
72	Vermouth 4 Emilius (by Orville) 4 Partisan 5 Whalebone	1861	The Nabob 4 Orville 4 Penelope (Dam of Whalebone) 4 Selim 4 Prunella	Vermeille 4 Whalebone 5 Orville
73	Virgil 4 Tramp 6 Orville 6 Blacklock's dam	1864 in America	Vandal 7 Pot8os (Grand-sire of Blacklock's dam)	Hymenia ?
74	Virgilius 4 Orville 6 Waxy 7 Sir Peter 7 Highflyer	1858	Voltigeur 5 Hambletonian 6 Sir Peter (by Highflyer, Grand-sire of Orville and Hambletonian) 7 Highflyer	Eclogue 5 Sir Peter 5 Highflyer
75	Voltaire 4 King Fergus 5 Highflyer	1826	Blacklock 3 Highflyer 4 Herod 4 Eclipse	Mare by Phantom 4 Highflyer 5 Eclipse
76	War Dance 4 The Baron (by Birdcatcher) 7 Banter	1887	Galliard 4 Birdcatcher 5 Voltaire	War Paint 4 Touchstone (out of Banter)
77	Wild Dayrell 4 Selim 7 Sir Peter	1852	Ion 3 Evelina 5 Sir Peter	Ellen Middleton 6 Sir Peter
78	Yattendon 4 Partisan 6 Waxy	1861 in Austral.	Sir Hercules (by Cap à Pie by Colonel) 4 Waxy 4 Penelope	Cassandra 4 Whiskey

Stallions with 5 Free Generations.

No.	Names of Stallions	Born	Sire	Dam
1	Alarm 5 Prunella (by Highflyer) 5 PotSos (by Eclipse) 6 Maria (by Herod)	1842	Venison 5 Eclipse 6 Herod	Southdown 5 Spadille (by Highflyer) 6 Highflyer (by Herod) 6 Eclipse
2	Alarm 5 Sultan (by Selim) 6 Bustard (by Buzzard)	1869	Imp. Eclipse 4 Selim (by Buzzard)	Imp. Maude 5 Blacklock 5 Tramp 7 Buzzard
3	Aurum II. 5 Fisherman 7 Touchstone	1894 in Austral.	Trenton 6 Touchstone 6 Camel	Aura 6 Marpessa
4	Ayrshire 5 Touchstone 5 Bee's Wing 6 The Baron (by Birdcatcher) 6 Voltaire	1885	Hampton 7 Whalebone (Grand-sire of Touchstone and Birdcatcher)	Atalanta 5 Birdcatcher Grand-sire: 2 Voltaire Grand-dam: 3 Touchstone
5	Birdcatcher 5 Woodpecker (by Herod) 6 Eclipse 6 Herod 6 Highflyer (by Herod)	1833	Sir Hercules 4 Eclipse 5 Herod 5 Highflyer	Guiccioli 2 Bagot (by Herod) Grand-sire: 2 Herod Grand-dam: 3 Herod
6	Buccaneer 5 Touchstone	1888	Privateer 3 Touchstone	Primula 3 Pocahontas 4 Redshank 5 Touchstone
7	Chamant 5 Emilius (by Orville) 6 Orville	1874	Mortemer 4 Partisan 6 Orville Grand-dam: 1 Emilius	Araucaria 5 Orville 5 Selim Grand-sire: 4 Orville
8	Chanticleer 5 Godol. Arabian	1787	Woodpecker 6 Darley Arabian	Mare by Eclipse 2 Regulus (by Godol. Arabian)
9	Charibert 5 Touchstone	1876	Thormanby 6 Orville	Gertrude 4 Sultan 6 Whalebone (Grand-sire of Touchstone)

No.	Names of Stallions	Born	Sire	Dam
10	Chester 5 Sir Hercules 5 Emilius (by Orville) 6 Sultan 6 Whisker (by Waxy)	1874 in Austral.	Yattendon 4 Partisan 6 Waxy 6 Buzzard (Grand-sire of Sultan)	Lady Chester 3 Economist (by Whisker) 5 Orville
11	Comus 5 Herod (by Tartar) 5 Snap 6 Cade (by Godol. Arabian)	1809	Sorcerer 2 Matchem (by Cade) [6 Partner 6 Godol. Arabian]	Houghton Lass 5 Blank (by Godol. Arabian) 5 Tartar (by Partner) 5 Regulus (by Godol. Arabian)
12	Cowl 5 Whiskey 5 Y. Giantess 7 Sir Peter (by Highflyer)	1842	Bay Middleton 4 Sir Peter 4 Arethusa 7 Eclipse	Crucifix 6 Highflyer 6 Herod (Grand-sire of Whiskey) 6 Eclipse (Grand-sire of Whiskey)
13	Defence 5 Herod 5 Highflyer (by Herod) 5 Eclipse 5 {Alfred Conductor	1824	Whalebone 3 Herod 4 Snap	Defiance 4 Herod 4 Highflyer 4 Eclipse 5 Alfred
14	Desmond 5 Voltigeur (by Voltaire)	1896	St. Simon 6 Sultan 6 Velocipede's dam Grand-sire: 2 Voltaire	L'Abbesse de Jouarre 4 Touchstone 5 Banter Grand-dam: 4 Voltaire
15	Despair 5 Defence 6 Whalebone (by Waxy) 6 Touchstone	1881	See Saw 7 Waxy	Peine de Coeur 5 Partisan 6 Whalebone
16	Dr. Syntax 5 Matchem (by Cade) 6 Snip 6 Cade 7 Crab	1811	Paynator 3 Snap (by Snip) 5 Godol. Arabian	Mare by Beningbrough 5 Cade (by Godol. Arabian) 5 Regulus (by Godol. Arabian) 7 Mare by Basto (Dam of Snip and Crab)

No.	Names of Stallions	Born	Sire	Dam
17	Donovan 5 Bay Middleton (by Sultan—Phantom) 5 Birdcatcher	1886	Galopin 2 Voltaire (out of Phantom Mare)	Mowerina 3 Touchstone 5 Muley 6 Sultan
18	Faugh-a-Ballagh 5 Woodpecker (by Herod) 6 Eclipse 6 Herod 6 Highflyer (by Herod)	1841	Sir Hercules 4 Eclipse 5 Herod 5 Highflyer	Guiccioli 2 Bagot (by Herod) Grand-sire : 2 Herod Grand-dam : 3 Herod
19	Fitz Gladiator 5 Buzzard 5 Mare by Alexander (by Eclipse) 5 Sir Peter (by Highflyer) 5 Gohanna	1850	Gladiator 4 Pot8os (by Eclipse) 4 Prunella (by Highflyer)	Zarah 4 Sir Peter 6 Eclipse 6 Herod
20	Flageolet 5 Partisan (by Walton) 7 Whalebone	1870	Plutus 4 Emilius	La Favorite 5 Whalebone Grand-dam : 3 Walton
21	Flibustier 5 Tramp 6 Sultan 7 Orville [own brother of Waisenknabe]	1867	Buccaneer 3 Edmund (by Orville) 5 Paynator	Sweet Katie 5 Tramp 6 Orville
22	Fulmen 5 Birdcatcher (by Sir Hercules)	1880	Galopin 2 Voltaire	Lightning 5 Sir Hercules
23	Glencoe 5 Mercury 6 Eclipse 6 Herod 6 Highflyer	1831	Sultan 4 Herod 4 Eclipse 4 Highflyer	Trampoline 4 Highflyer 4 Eclipse 5 Herod
24	Harkaway 5 Pot8os (by Eclipse) 6 Highflyer 7 Herod	1834	Economist 4 Eclipse 4 Herod 5 Highflyer	Mare by Nabocklish 4 Highflyer (by Herod) Grand-dam : 2 Highflyer Great Grand-dam : 2 Herod

No.	Names of Stallions	Born	Sire	Dam
25	Highflyer 5 Sister to Mixbury 6 Darley's Arabian	1774	Herod 7 Leedes Arabian 7 Hautboy 7 Spanker	Rachel 1 Godol. Arabian 6 St. Victor's Barb 6 Grey Whynot
26	Jerry 5 Herod 6 Matchem (by Cade)	1821	Smolensko 4 Herod 5 Snap 6 Cade	Louisa 3 Highflyer 5 Herod 5 Matchem
27	Isinglass 5 Birdcatcher 5 The Baron (by Birdcatcher) 5 Pocahontas 6 Touchstone	1890	Isonomy 3 Birdcatcher	Dead Lock 4 Touchstone
28	Ithuriel 5 Buzzard 5 Mare by Alexander (by Eclipse)	1841	Touchstone 4 Alexander 5 Eclipse 5 Buzzard 5 Sir Peter	Verbena 4 Sir Peter 5 Highflyer
29	King Tom 5 Waxy (by Pot8os) 5 Penelope	1851	Harkaway 5 Pot8os (by Eclipse) 6 Highflyer	Pocahontas 5 Gohanna (by Mercury) 6 Mercury (by Eclipse)
30	Ladas 5 Touchstone 5 Queen Mary 5 Melbourne	1891	Hampton 7 Whalebone (Grand-sire of Touchstone)	Illuminata 4 Touchstone
31	Lamplighter 5 Glencoe (by Sultan) 6 Emilius (by Orville) 6 Touchstone 6 Sultan (by Selim)	1889 in America	Spendthrift 5 Emilius 6 Selim ?	Torchlight 4 Touchstone 7 Orville Grand-dam: 3 Sultan
32	Marske 5 Hautboy 5 Lister Turk 7 Leedes Arabian 7 Mare by Spanker	1750	Squirt ? Grand-dam: 1 Hautboy	Ruby Mare 3 Coneyskins (by Lister Turk) 4 Hautboy
33	Matchem 5 Mare by Spanker	1848	Cade ?	Mare by Partner 5 Darcy's Yellow Turk (Sire of Spanker)

No.	Names of Stallions	Born	Sire	Dam
34	Minting 5 Birdcatcher 5 Touchstone 5 Glencoe 7 {Selim Castrel}	1883	Lord Lyon 6 Selim 6 Whalebone (Grand-sire of Birdcatcher and Touchstone)	Mint Sauce 7 Castrel 7 Comus Grand-dam : 3 Touchstone
35	Morion 5 Touchstone 7 Whalebone	1887	Barcaldine 1 Darling's dam 5 Touchstone	Chaplet 4 Priam 5 Whalebone
36	Mulatto 5 Florizel (by Herod) 5 Highflyer (by Herod) 6 Herod 6 Eclipse (by Marske)	1823	Catton 4 Herod 4 Eclipse 5 Matchem	Desdemona 2 Highflyer 5 Marske
37	Newminster 5 Beningbrough (by King Fergus [by Eclipse] and a Herod-Mare) 5 Trumpator	1848	Touchstone 4 Alexander 5 Eclipse 5 Sir Peter 6 Highflyer (by Herod)	Bee's Wing 6 Eclipse 6 Herod
38	Norfolk 5 Sir Archy	1861 in America	Lexington 3 Sir Archy 6 Saltram (by Eclipse, Grand-sire of Waxy)	Novice 5 Buzzard 6 Waxy Grand-dam : 2 Sir Archy Great Grand-dam : 1 Sir Archy
39	Orme 5 Pocahontas (by Glencoe) 6 Birdcatcher	1889	Ormonde 5 Birdcatcher 5 Pantaloon	Angelica 6 Sultan (Sire of Glencoe) 6 Velocipede's dam
40	Ormonde 5 Birdcatcher 5 Pantaloon (by Castrel) 7 Banter	1883	Bend Or 6 Touchstone Grand-sire : 6 Blacklock	Lily Agnes 6 Blacklock 6 {Selim Castrel}
41	Persimmon 5 Voltigeur (by Voltaire) 6 Pocahontas	1893	St. Simon 6 Sultan (Grand-sire of Pocahontas) 6 Velocipede's dam 7 Blacklock (Sire of Voltaire) Grand-sire : 2 Voltaire	Perditta II. 3 Melbourne 6 Voltaire } Parents of Voltigeur 6 Martha Lynn } 6 Pocahontas

No.	Names of Stallions	Born	Sire	Dam
42	Perth 5 Newminster 5 Stockwell (by The Baron)	1896	War Dance 4 The Baron 7 Banter	Primrose Dame 4 Newminster 4 Stockwell 5 Touchstone 6 Birdcatcher Grand-sire : 2 Touchstone 2 Bee's Wing
43	Pyrrhus the First 5 Buzzard (by Woodpecker) 5 Mare by Alexander (by Eclipse)	1843	Epirus 3 Sir Peter 4 Diomed 5 Herod 5 Eclipse	Fortress 1 Whalebone 4 Highland Fling 5 Buzzard 6 Woodpecker (by Herod)
44	Rataplan 5 Orville 6 Waxy 6 Penelope	1850	The Baron 4 Waxy 4 Penelope	Pocahontas 5 Gohanna 6 Mercury 7 Highflyer (Grand-sire of Orville)
45	Sheet Anchor 5 Woodpecker (by Herod) 6 Eclipse 6 Mercury 6 Mare by Herod	1832	Lottery 3 Eclipse 4 Trentham 4 Woodpecker 5 Herod	Morgiana 2 Y. Giantess 6 Herod 6 Eclipse
46	Sir Visto 5 Pocahontas 5 Newminster 6 Banter (Dam of Touchstone)	1892	Barcaldine 1 Darling's dam (by Birdcatcher) 5 Touchstone	Vista 4 Banter 4 Pantaloon
47	St. Florian 5 Ion 6 Bay Middleton (by Sultan)	1891	St. Simon 6 Sultan	Palmflower 5 Bay Middleton 5 Touchstone
48	Saunterer 5 Waxy 5 Penelope	1854	Birdcatcher 5 Woodpecker 6 Eclipse (Grand-sire of Waxy)	Ennui 5 Waxy 5 Penelope 6 Whiskey 6 Sorcerer
49	Scottish Chief 5 Orville (by Beningbrough) 6 Selim 7 Buzzard (by Woodpecker)	1861	Lord of the Isles 5 Buzzard 5 Mare by Alexander (by Eclipse) 6 Beningbrough	Miss Ann 7 Woodpecker 7 Mercury (by Eclipse)

No.	Names of Stallions	Born	Sire	Dam
50	Solon 5 Whalebone (by Waxy) 5 Comus 6 Waxy 6 Penelope (by Trumpator)	1861	West Australian 6 Trumpator (Grand-sire of Comus)	Darling's Dam 5 Waxy 6 Pot8os 7 Trumpator
51	Spendthrift 5 Emilius 6 Selim 7 Waxy } Parents of 6 Penelope } Whisker	1876 in America	Imp. Australian 3 Whisker 6 Selim 6 Evelina (Grand-dam of Emilius) 7 Stamford (Grand-sire of Emilius)	Aerolite ?
52	Springfield 5 Sultan (by Selim) 6 Camel (by Whalebone) 6 Banter	1873	St. Albans 6 Whalebone	Viridis 4 Camel 4 Langar (by Selim) 5 Selim
53	Sterling 5 Whalebone	1868	Oxford 7 Waxy } Parents of 7 Penelope } Whalebone	Whisper 5 Whalebone 6 Waxy
54	Stockwell 5 Orville 6 Waxy 6 Penelope	1849	The Baron 4 Waxy 4 Penelope	Pocahontas 5 Gohanna 6 Mercury 7 Highflyer (Grand-sire of Orville)
55	Timoleon 5 Trentham 7 Blank (by Godol. Arabian)	1814 in America	Sir Archy 3 Herod 5 Blank Grand-sire: 4 Godol. Arabian Grand-dam: 6 Godol. Arabian 6 Regulus	Mare by Saltram 4 Regulus (by Godol. Arabian) Grand-sire: 2 Regulus Grand-dam: 4 Regulus
56	Van Tromp 5 Buzzard (by Woodpecker) 6 Pot8os (by Eclipse) 6 Gohanna	1841	Lanercost 4 Gohanna (by Mercury by Eclipse) 5 Woodpecker 5 Highflyer 5 Trumpator 6 Eclipse	Barbelle 6 Woodpecker 6 Eclipse 6 Herod

No.	Names of Stallions	Born	Sire	Dam
57	Velocipede 5 Highflyer (by Herod) 5 Pot8os (by Eclipse) 7 Matchem	1825	Blacklock 3 Highflyer 4 Eclipse 4 Herod	Mare by Juniper 5 Eclipse 6 Herod 6 Matchem
58	Venison 5 Eclipse 6 Herod 7 Snap	1833	Partisan 2 Highflyer (by Herod) 3 Eclipse 4 Snap	Fawn 4 Herod
59	Voltigeur 5 Hambletonian (by King Fergus) 6 Coriander 6 Sir Peter (by Highflyer) 7 Highflyer	1847	Voltaire 4 King Fergus 5 Highflyer (Grandsire of Hambletonian)	Martha Lynn 4 Sir Peter 6 King Fergus
60	Waxy 5 Godol. Arabian 6 Partner (by Jigg) 6 {B. Childers / Fl. Childers}	1790	Pot8os 4 Godol. Arabian	Maria 4 Flying Childers 4 Fox 6 Byerly Turk (Sire of Jigg)
61	Xenophon 5 Whalebone (by Waxy)	1872	Canary 3 Camel (by Whalebone) 4 Selim 5 Orville	Mare by Birdcatcher 5 Waxy

Stallions with 6 Free Generations.

No.	Names of Stallions	Born	Sire	Dam
1	Beauclerc 6 Whalebone	1875	Rosicrucian 4 Priam 5 Whalebone	Bonny Bell 5 Walton Grand-dam : 3 Whalebone
2	Bend'Or 6 Touchstone 6 Muley (by Orville) 7 Selim (by Buzzard)	1877	Doncaster 6 Blacklock 7 Whalebone 7 Selim	Rouge Rose 6 Orville 6 Buzzard 6 Mare by Alexander 7 Waxy

No.	Names of Stallions	Born	Sire	Dam
3	Blair Athol 6 Whalebone 7 Orville 7 Evelina	1861	Stockwell 5 Orville 6 Waxy } Parents of Whalebone 6 Penelope }	Blink Bonny 6 Evelina (Dam of Orville) 6 Sir Peter 7 Trumpator (Grand-sire of Whalebone) 7 Highflyer (Grand-sire of Orville) Grand-dam : 3 Whalebone
4	Compiegne 6 Whalebone 7 Mare by Alexander 7 Buzzard 7 Sir Peter 7 Beningbrough 7 Gohanna	1858	Fitz Gladiator 5 Buzzard 5 Mare by Alexander 5 Sir Peter 5 Gohanna	Maid of Hart 6 Sir Peter 6 Beningbrough 6 Waxy 6 Evelina
5	Cremorne 6 Tramp 7 Selim 8 Waxy 8 Penelope 8 PotSos	1869	Parmesan 6 Waxy 6 Penelope 6 PotSos 6 Prunella	Rigolboche 5 Tramp 5 Selim
6	Doncaster 6 Blacklock 7 Whalebone 7 Selim	1870	Stockwell 5 Orville 6 Waxy } Parents of Whalebone 6 Penelope }	Marigold 4 Humphrey Clinker 6 Selim
7	Favonius 6 Whisker	1868	Parmesan 6 Waxy } Parents of Whisker 6 Penelope } 6 Prunella } Grand-parents of Whisker 6 PotSos }	Zephyr 5 Whisker
8	Grand Flaneur 6 Sir Hercules (by Whalebone)	1877	Yattendon 4 Partisan 6 Waxy (Sire of Whalebone)	First Lady 5 Pantaloon 5 Camel (by Whalebone)
9	Hindoo 6 Emilius (by Orville) 7 Tramp	1878 in America	Virgil 4 Tramp 6 Orville	Florence 5 Emilius 6 Orville
10	King Fergus 6 Bay Bolton	1775	Eclipse 3 Sister to Old Country Wench 4 Snake 6 Hautboy	Polly 6 Byerly Turk

No.	Names of Stallions	Born	Sire	Dam
11	Kisber 6 Sultan 7 Orville	1873	Buccaneer 3 Edmund (by Orville) 5 Paynator	Mineral 1 Birdcatcher 7 Orville
12	Leamington 6 Woodpecker 6 Alexander (by Eclipse)	1853	Faugh-a-Ballagh 5 Woodpecker 6 Eclipse	Mare by Pantaloon 4 Buzzard (by Woodpecker) 4 Mare by Alexander
13	Lord Clifden 6 Paynator (by Trumpator) 7 Orville (by Beningbrough)	1860	Newminster 5 Trumpator 5 Beningbrough	The Slave 5 Golumpus
14	Lord Lyon 6 Whalebone 6 Selim 7 Orville	1863	Stockwell 5 Orville 6 Waxy } Parents of Whalebone 6 Penelope }	Paradigm 5 Selim 5 Waxy 6 Orville
15	Lord Ronald 6 Whalebone 7 Selim 7 Orville	1862	Stockwell 5 Orville 6 Waxy } Parents of Whalebone 6 Penelope }	Edith 5 Whalebone 6 Selim
16	Macaroni 6 Sir Peter (by Highflyer) 6 Orville (Grand-son of Highflyer) 6 Buzzard 6 Mare by Alexander	1860	Sweetmeat 4 Walton (by Sir Peter) 6 Pot8os (by Eclipse)	Jocose 3 Alexander (by Eclipse) 4 Highflyer 4 Buzzard 5 Sir Peter (by Highflyer)
17	Matchbox 6 Bay Middleton (by Sultan)	1891	St. Simon 6 Sultan	Match Girl 3 Orlando
18	Parmesan 6 Waxy (by Pot8os) 6 Whalebone 6 Penelope 6 Pot8os 6 Prunella (Dam of Penelope)	1857	Sweetmeat 4 Walton 6 Pot8os	Gruyere 3 Waxy 3 Penelope
19	Phaeton 6 Orville 7 Waxy 7 Penelope 6 { Castrel Selim	1865 in America	King Tom 5 Waxy 5 Penelope	Merry Sunshine 1 Touchstone 5 Orville 5 Castrel

No.	Names of Stallions	Born	Sire	Dam
20	Rustic 6 Whalebone	1863	Stockwell 5 Orville 6 Waxy 6 Penelope } Parents of Whalebone	Village Lass 5 Whalebone
21	St. Albans 6 Whalebone [own brother to Savernake]	1857	Stockwell 5 Orville 6 Waxy 6 Penelope } Parents of Whalebone	Bribery 6 Sir Peter 6 Stamford 6 Woodpecker
22	St. Frusquin 6 Bay Middleton (by Sultan)	1893	St. Simon 6 Sultan	Isabel 6 Touchstone 6 Emma
23	St. Simon 6 Sultan (by Selim) 6 Velocipede's dam 7 Blacklock	1881	Galopin 2 Voltaire (by Blacklock)	St. Angela 6 Selim
24	Salvator 6 Selim 6 Orville	1872	Dollar 4 Catton 6 Beningbrough 6 Evelina } Parents of Orville Grand-sire: 3 Selim	Sauvagine 4 Selim Grand-dam: 3 Selim
25	Speculum 6 Orville	1865	Vedette 3 Blacklock	Doralice 4 Orville
26	Teddington 6 Stamford (by Sir Peter) 7 Trumpator 7 Sir Peter	1848	Orlando 3 Selim 5 Alexander (by Eclipse, Grand-sire of Stamford) 6 Sir Peter	Miss Twickenham 5 Sir Peter Grand-sire: 3 Trumpator
27	Thormanby 6 Orville 7 Woodpecker (by Herod)	1857	Windhound 3 Peruvian 5 Buzzard (by Woodpecker) 5 Mare by Alexander	Alice Hawthorn 3 Dick Andrews 4 Beningbrough 4 Evelina (by Highflyer) } Parents of Orville
28	Trenton 6 Touchstone 6 Camel 7 Whalebone	1881 in Austral.	Musket 4 Touchstone 4 Camel Grand-dam: 2 Camel	Frailty 5 Sir Hercules 6 Whalebone
29	Tristan 6 Sultan (by Selim) 7 Whalebone 8 Orville	1878	Hermit 4 Camel (by Whalebone) 6 Selim 6 Paynator 7 Orville	Trieft 5 Tramp 6 Whalebone 6 Whisker 6 Orville

No	Names of Stallions	Born	Sire	Dam
30	Wenlock 6 Whalebone	1869	Lord Clifden 6 Paynator 7 Orville	Mineral 1 Birdcatcher 7 Orville
31	West Australian 6 Evelina (by Highflyer) 6 Trumpator 7 Eclipse 7 Sir Peter (by Highflyer)	1850	Melbourne 4 Termagant 5 Trumpator 5 Highflyer 6 Eclipse	Mowerina 3 Waxy 3 Penelope (by Trumpator) 6 Sir Peter 6 Eclipse
32	Woodpecker 6 Darley Arabian	1773	Herod 7 Leedes Arabian 7 Hautboy 7 Spanker	Miss Ramsden ?
33	Y. Melbourne 6 Sir Peter (by Highflyer)	1855	Melbourne 4 Termagant 5 Trumpator 5 Highflyer 6 Eclipse Grand-sire : 2 Sir Peter	Clarissa 4 Buzzard 4 Mare by Alexander 5 Sir Peter

Stallions with 7 Free Generations.

No	Names of Stallions	Born	Sire	Dam
1	Atlantic 7 Orville 7 Buzzard 7 Mare by Alexander [Parents of Selim]	1871	Thormanby 6 Orville 7 Woodpecker (Sire of Buzzard) 7 Sir Peter Grand-sire : 4 Evelina (Dam of Orville)	Hurricane 3 Sultan (by Selim) Grand-sire : 4 Selim
2	Hampton 7 Whalebone	1872	Lord Clifden 6 Paynator	Lady Langden 3 Liverpool 7 Whalebone
3	Herod 7 Spanker	1758	Tartar 6 Old Peg (Dam of Spanker)	Cypron 3 Darley's Arabian
4	Himyar 7 Muley (by Orville)	1875 in America	Alarm 5 Sultan	Hira 3 Emilius (by Orville) 5 Sir Archy
5	Iroquois 7 Waxy 7 Penelope	1878	Leamington 6 Woodpecker 6 Alexander	Maggie 6 Selim

No.	Names of Stallions	Born	Sire	Dam
6	Kingfisher 7 Orville 7 Sir Peter 8 Walton	1867 in America	Lexington 3 Sir Archy	Eltham Lass 6 Walton 7 Orville
7	Oxford 7 Waxy 7 Penelope	1857	Birdcatcher 5 Woodpecker 6 Eclipse 6 Herod 6 Highflyer	Honeydear 3 Orville 4 Selim
8	See Saw 7 Orville 7 Waxy 8 Trumpator	1865	Buccaneer 3 Edmund (by Orville) 5 Paynator (by Trumpator)	Margery Daw 5 Waxy 5 Penelope (by Trumpator) 6 Orville
9	Toxophilite 7 Sir Peter (by Highflyer, Grand-sire of Orville) 7 Woodpecker	1855	Longbow 4 Orville 7 Woodpecker	Legerdemain 2 Peruvian (by Sir Peter) 5 Woodpecker Grand-dam : 2 Sir Peter
10	Trachenberg 7 Bustard 8 Orville	1879	Flibustier 5 Tramp 6 Sultan 7 Orville	Dirt Cheap 3 Camel 6 Buzzard (Grand-sire of Bustard and Sultan)
11	Vandal 7 Pot8os (by Eclipse) 8 Highflyer 8 Herod	1850 in America	Glencoe 5 Mercury 6 Eclipse 6 Herod 6 Highflyer 6 Woodpecker	Mare by Tranby 7 Highflyer
12	War Dance 7 Dick Andrews 7 Orville	1859 in America	Lexington 3 Sir Archy 6 Saltram (by Eclipse, Grand-sire of Dick Andrews and Gohanna)	Reel 5 Gohanna

Stallions with 8 Free Generations.

No.	Names of Stallions	Born	Sire	Dam
1	Missel Trush 8 Glencoe 8 Banter (Dam of Touchstone) 8 Bay Middleton	1897	Orme 5 Pocahontas (by Glencoe) 6 Birdcatcher	Throstle 4 Touchstone Grand-sire : 2 Touchstone Grand-dam : 4 Bay Middleton

From these examples may be drawn the following conclusions :—

1. The greatest number of approved sires are to be found amongst those with 3, 4 and 5 free generations. Also the sires and dams of the above-mentioned 270 stallions with 1 to 8 free generations, have, as a simple calculation will show, on an average, 4 (exactly 4.13) free generations. This is a very remarkable and interesting result, and may be taken as a proof of the example. We here again see it confirmed that 4 free generations represent the most favourable inbreeding for successful breeding material.

2. In former times we find more successful stallions with close inbreeding than in modern times. Of stallions with 1 free generation in modern times, only Barcaldine and Flying Fox can be considered really successful. It seems to me to be an open question, in any case it has yet to be proved, whether either of them will be the founder of such a successful line as Paulowitz, born 1793. Among the stallions with 2 free generations in the past, the following may be mentioned as especially prominent : Brutandorf, Gohanna, Golumpus, Humphrey Clinker, Orville, Partisan, Sorcerer, etc. As equal to these in modern times we can only mention Galopin, Wisdom, and Sainfoin. In the case of 3 and 4 free generations, ancient and modern times are about equal. In the case of 5 and more free generations in former times are specially to be mentioned : Herod, Highflyer, King Fergus, Marske, Matchem, Waxy, and Woodpecker. The great majority of the horses mentioned in these lists are the very best stallions of the more and most recent times.

3. As regards the repetition of closer inbreedings, it can be seen that the sires of stallions with 1 free generation had at least 4 (on an average $4\frac{1}{2}$) free generations, *i.e.*, a little more than the remaining stallions with further removed inbreeding. We can therefore come to the conclusion that a repetition of such close inbreeding has not been successful. Also amongst the many examples with only 2 free generations, Golumpus is the only one that can be mentioned in which the sire also had only 2 free generations, but the further removed inbreeding on the basis of Godol. Arabian is strongly supported on the dam's and sire's side.

4. In the case of the most successful stallions with a close inbreeding (1 and 2 free generations), a further removed inbreeding of the same is supported in nearly every case by a corresponding inbreeding of the parents, for example, with Paulowitz (1 Highflyer and 1 Termagant) the more removed inbreeding of the same is most strongly supported, viz., 6 Regulus, as well as by the sire Sir Paul (4 Regulus) as by the dam Evelina (4 Regulus). Also in the case of Flying Fox (1 Galopin), the more removed inbreeding of same, *i.e.*, 6 Stockwell and 7 Pocahontas, is strongly supported by the sire Orme (5 Pocahontas and 6 Birdcatcher) and a little by the dam Vampire (2 Vedette and 6 Birdcatcher). In the case of Friponnier (1 Orlando, 7 Orville, 7 Walton) the more removed inbreeding is strongly supported by the sire (5 Orville) and by the dam (5 Walton). In the case of the Derby

and 2,000 Guineas winner Cadland (1 Sorcerer, 4 Highflyer [by Herod], 4 Woodpecker [by Herod]) also, the more removed inbreeding is supported by the sire Andrew (5 Herod) and by the dam Sorcery (5 Herod). Among the stallions with 2 free generations, in the case of most, and those the very best, the support of more removed inbreeding is visible by a corresponding inbreeding of the parents, as, for example, with Partisan the more removed inbreeding to Snap and Regulus, with Hanover the more removed inbreeding to Emilius, with Petrarch the more removed inbreeding to Selim, with Priam to Herod, with The Saddler to Highflyer, with Wisdom to Orville, with Janissary to Touchstone, etc.

5. Inbreedings of the best stallions are supported by the inbreedings of sire or dam, or both, on the same or related basis. If the inbreeding is a close one, *i.e.*, under 4 or 5 free generations, it is advantageous not to support this close, but more removed inbreedings, if such exist, as is explained in No. 4. It is therefore always advantageous to have several inbreedings, each on a different basis. Such stallions are also easier to get at for mating. One of the best examples of this is Eclipse himself (see No. 12, page 241), in whose case also the closest inbreeding (3 Sister to Old Country Wench) is not directly supported by the inbreedings of the parents. The following more removed inbreedings: 4 Snake, 6 Hautboy, and 7 Coneyskins, are supported by the inbreedings of both parents and both grandmothers. This support of the inbreeding of prominent stallions by the inbreeding of their parents is also often strikingly visible in the case of stallions with 7 and more free generations, as in the case of Atlantic, etc. The Derby winner Iroquois, himself a prominent racer, but not quite as successful at the stud, does not show the support of his inbreeding which is required above, as is to be seen (page 266, No. 5), but his best son, Tammany, has again the requisite support of his inbreeding by 6 Glencoe, and his dam, 4 Glencoe.

In the following table of the most important male blood lines the above rule of inbreeding support is distinctly recognisable. Stallions in the cases of which these inbreeding supports are especially visible, outlast in their progeny intermediately one generation without this support, as in the case of Eclipse himself, whose sons, Pot8os, Mercury, and King Fergus, have stood well one generation without this inbreeding support. Their sons, Waxy, Gohanna, Beningbrough, and Hambletonian, show already distinctly the desired supports. Joe Andrews is the only son of Eclipse who answers himself the above demands. In contrast to Eclipse, the other two foundation sires, Herod and Matchem, as well as their sons (with the exception of Florizel, sire of the first Derby winner, Diomed), show a much smaller, and in some cases no inbreeding support at all. This is probably the cause of the Eclipse progeny, in spite of the many good racehorses which Highflyer has also produced, excelling most others as regards breeding value. Eclipse left behind him four important male lines, Highflyer and Woodpecker *only one each*. Here followed two consecutive generations (Herod and his two

sons, Highflyer and Woodpecker) without the requisite inbreeding supports. Nevertheless, Herod and his son Highflyer have proved themselves to be a very good basis of every inbreeding. The Herod blood only commences to produce more sires for Thoroughbred breeding with the much better bred Sir Peter, born 1784 by Highflyer, and Buzzard, born 1787 by Woodpecker. The Matchem blood has undergone a similar experience, as his son, Conductor, did not possess sufficient inbreeding supports. Trumpator, born 1782 by Conductor, as well as his two sons, Sorcerer and Paynator, were the first to succeed in influencing Thoroughbred breeding to a greater extent, as only in their pedigree the requisite inbreeding supports became significant.

From the following list of male blood lines we can further see that the Herod and Matchem lines possess Eclipse, or Eclipse progeny, more rarely as the basis of their inbreedings than the Eclipse line itself. In the Herod line, for example, the first Eclipse inbreeding, even yet little supported, occurs in the American bred Boston. The Sultan-Glencoe line, well supported by Eclipse inbreeding, has also had its chief importance in America. Europe only retained Glencoe's celebrated daughter Pocahontas. In the Bay Middleton-Fl. Dutchman line, which remained here, the Highflyer inbreeding prevails, and in the Highflyer line, which also remained here, there is no Eclipse inbreeding at all (page 282). Only the Pantaloon line (page 285) shows some Eclipse inbreedings, but generally inferior to the Herod connections. The Walton line (page 283) has been more fortunate. The latter and the Pantaloon line have also produced the best representatives of the Herod blood in Sweetmeat, Chamant, and Thormanby.

A similar picture is found in the Matchem line (page 286). The Smolensko-Jerry line, as well as the Paynator and Dr. Syntax line, does not show any Eclipse inbreeding at all. The Sorcerer-Comus line, beginning modestly with Humphrey Clinker, showed the first somewhat effectively supported Eclipse inbreedings in the case of Melbourne and West Australian. This is very probably the reason that Melbourne is the only remaining scion of the Matchem line, whose best son, West Australian, was early sold to France. Fortunately, West Australian left behind him in England a stallion well strengthened by many Whalebone, Waxy, Pot8os (all Eclipse's progeny) inbreedings, *i.e.*, Solon, sire of Barcaldine. The efficacy of inbreeding supports can be most instructively seen in the long male line from Highflyer down to Fels (page 282). Only in the case of Wild Dayrell and Buccaneer is this support somewhat deficient, and, in consequence, one had to wait for a son of Buccaneer endowed with a more distinct support of inbreedings in order to effectively continue this line. Kisber was not such an one, but Flibustier (and his own brother Waisenknabe), with his double connection over Tramp and Orville. See Saw was perhaps sufficient regarding the building of the pedigree, but of too little class. Kisber was the third member of a male line built up with insufficiently supported inbreeding. On this account his heredity did not come up to expectations which were founded on

his great racing form. In England, Flibustier, and perhaps also Waisen-knabe, with Kisber's chances, might have been a great success. Buccaneer with his inbreeding (3 Edmund and 5 Paynator) was certainly difficult to handle so as to obtain the required inbreeding support. Also Fenek (6 Tramp, 7 Sultan, dam 5 Cervantes), Good Hope (6 Tramp, 6 Sultan, 7 Orville, dam 7 Orville), and Pirat (5 Cain, 6 Sorcerer, dam 3 Comus, 5 Sir Peter), had not sufficient inbreeding supports in the building up of their pedigrees. Nil Desperandum was bred a little more favourably, but not sufficiently so: 4 Bay Middleton, 6 Orville, 7 Paynator, dam 2 Touchstone, 5 Whalebone.

Eclipse Line.

1. **Pot8os** by Eclipse 1773.	4 Godol. Arabian.	
2. **Waxy** 1790.	5 Godol. Arabian. 6 Partner (by Jigg)	Dam 4 Fl. Childers. 4 Fox. 6 Byerly Turk (Sire of Jigg).
3. **Whalebone** 1807.	3 Herod. 4 Snap. 6 Cade (by God. Arabian).	Dam 3 Snap. 6 Partner (Grand-sire of Herod). 6 Godol. Arabian.
4. **Camel** 1882.	4 Highflyer. 5 Eclipse. 5 Herod. 6 Snap.	Dam 3 Highflyer. 4 Herod.
5. **Touchstone** 1831.	4 Alexander (by Eclipse). 5 Eclipse. 5 Buzzard. 5 Sir Peter. 6 Highflyer.	Dam 4 Eclipse.
6. **Newminster** 1848.	5 Beningbrough (by King Fergus-Herod). 5 Trumpator.	Dam 6 Eclipse (Sire of King Fergus). 6 Herod.
6. **Hermit** 1864.	4 Camel. 6 Paynator (by Trumpator). 6 Selim. 7 Orville (by Beningbrough).	Dam 3 Sultan (by Selim). 5 Beningbrough.
8. **Tristan** 1878.	6 Sultan (by Selim). 7 Whalebone.	Dam 5 Tramp. 6 Whisker. 6 Whalebone. 6 Orville.

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4. **Sir Hercules** by Whalebone 1826.	4 Eclipse. 5 Highflyer. 5 Herod. 7 Snap.	Dam 3 Eclipse. 5 Herod.
5. **Birdcatcher** 1833.	5 Woodpecker (by Herod). 6 Eclipse. 6 Herod. 6 Highflyer.	Dam 2 Bagot (by Herod).
6. **The Baron** 1842.	4 Waxy (by Pot8os). 4 Penelope.	Dam 6 Pot8os. 6 Phonomenon. 6 Highflyer (Grand-sire of Penelope).
8. **Stockwell** 1849.	5 Orville. 6 Waxy. 6 Penelope.	Dam 5 Gohanna. 6 Mercury. 7 Highflyer (Grand-sire of Orville and Penelope).
8. **Blair Athol** 1861.	6 Whalebone (by Waxy and Penelope). 7 Orville.	Dam 6 Evelina (Dam of Orville). 6 Sir Peter. 7 Trumpator (Grand-sire of Whalebone). 7 Highflyer (Grand-sire of Orville).

6. **Ithuriel** by Touchstone 1841. 5 Buzzard. 5 Mare by Alexander.	Dam 4 Sir Peter. 5 Highflyer.
7. **Longbow** 4 Orville (2 Herod). 1849. 7 Woodpecker (by Herod).	Dam 5 Highflyer. 6 Herod. 6 Eclipse.
8. **Toxophilite** 7 Sir Peter (by Highflyer, Grand-sire of Orville). 1855. 7 Woodpecker (by Herod).	Dam 2 Peruvian (by Sir Peter). 5 Woodpecker. Grand-dam 2 Sir Peter.
9. **Musket** 4 Touchstone. 1867. 4 Camel.	Dam 2 Camel.
10. **Nordenfeldt** 4 Melbourne. 1882. 5 Touchstone.	Dam 3 Touchstone
10. **Trenton** by Musket 1881. 6 Touchstone. 7 Whalebone. 6 Camel.	Dam 5 Sir Hercules. 6 Whalebone.
10. **Carbine** by Musket 1885. 3 Brown Bess (by Camel). 5 Touchstone.	Dam 3 Touchstone 4 Camel.
11. **Spearmint** 4 Stockwell. 6 Orlando (by Touch.). 6 Melbourne.	Dam 3 Stockwell. 5 Orlando. 3 Y. Melbourne.
6. **Orlando** by Touchstone 1841. 3 Selim. 6 Sir Peter. 5 Alexander.	Dam 3 Buzzard, 3 Mare by Alexander } Parents of Selim. 4 Sir Peter.
7. **Trumpeter** 4 Selim. 1856. 5 Orville.	Dam 4 Buzzard, 4 Mare by Alexander } Parents of Selim. 4 Beningbrough, 4 Evelina } Parents of Orville.
8. **Plutus** 4 Emilius (by Orville). 1862. 6 Selim.	Dam 5 Selim.
9. **Flageolet** 5 Partisan (by Walton). 1870. 7 Whalebone.	Dam 5 Whalebone. Grand-dam 3 Walton.
10. **Le Destrier** 4 Gladiator (by Partisan). 1877.	Dam 5 Partisan.

6. **Newminster** by Touchstone	Dam 6 Eclipse.
1848. 5 Beningbrough (by King Fergus [by Eclipse] and Herod-Mare).	6 Herod.
5 Trumpator.	
7. **Lord Cliften** 6 Paynator (by Trumpator).	Dam 5 Golumpus.
1860. 7 Orville (by Beningbrough).	
8. **Hampton** 7 Whalebone.	Dam 3 Liverpool
1872.	7 Whalebone.
9. **Ladas** 5 Touchstone.	Dam 4 Touchstone.
1891. 6 The Baron.	
6 Pocahontas.	
10. **Troutbeck** 6 Stockwell.	Dam 3 Thormanby.
1903. 7 Touchstone.	4 Stockwell.
	6 Birdcatcher.
	7 Banter.

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8. **Petrarch** by Lord Clifden	Dam 4 Whalebone (Grand-sire of Touchstone).
1873. 2 Touchstone.	
7 Selim.	5 Selim.
9. **The Bard** 4 Melbourne.	Dam 6 Comus (Grand-sire of Melbourne).
1883. 7 Defence (by Whalebone).	6 Whalebone.
	6 Sultan (by Selim).

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7. **Cambuscan** by Newminster	Dam 4 Beningbrough.
1861. 4 Whalebone.	
5 Orville (by Beningbrough).	
6 Beningbrough.	

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7. **Adventurer** by Newminster	Dam 1 Orville.
1859. 4 Orville.	4 Sir Peter.
6 Stamford (by Sir Peter).	

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7. **Eclipse** by Orlando	Dam 2 Phantom.
Amer. 1855. 4 Selim (by Buzzard).	
8. **Alarm** 5 Sultan (by Selim).	Dam 5 Blacklock.
1869. 6 Bustard (by Buzzard).	5 Tramp.
	7 Buzzard.
9. **Himyar** 7 Muley (by Orville)	Dam 3 Emilius (by Orville).
1875. [2 Herod].	5 Sir Archy (3 Herod).
10. **Domino** 3 Lexington.	Dam 2 Lexington.
1891.	
11. **Commando** 5 Lexington.	
1898.	

Sire side	Dam side
6. **Oxford** by Birdcatcher	Dam 3 Orville.
1857. 7 Waxy.	4 Selim.
7 Penelope.	
7. **Sterling** 5 Whalebone (by Waxy and Penelope).	Dam 5 Whalebone.
1868.	6 Waxy.
8. **Isonomy** 3 Birdcatcher (by Sir Hercules and Guiccioli).	Dam 4 Sir Hercules.
1875.	4 Guiccioli.
9. **Isinglass** 5 Birdcatcher. 5 Pocahontas.	Dam 4 Touchstone.
1890. 5 The Baron. 6 Touchstone.	
9. **Gallinule** by Isonomy	Dam 7 Selim (Grand-sire of Camel).
1884. 3 Stockwell. 6 Birdcatcher.	Grand-sire 4 Camel.
5 Touchstone (by Camel).	
10. **Slieve Gallion** 6 Stockwell. 7 Touchstone.	Dam 2 Galopin (Grand-son of Volt.).
1904. 7 Pocahontas. 7 Voltigeur.	7 Pocahontas. 7 Touchstone.
9. **Janissary** by Isonomy	Dam 3 Touchstone.
1887. 2 Stockwell.	
5 Touchstone.	
5 Melbourne.	
10. **Jeddah** 6 Touchstone.	Dam 5 Banter (Dam of Touchstone).
1895.	
8. **Energy** by Sterling	Dam 4 Sir Hercules.
1880. 4 Sir Hercules.	5 Touchstone.
4 Birdcatcher.	
5 Touchstone.	
9. **Gouverneur** 4 Touchstone.	Dam 5 Smolensko.
1888. 7 Whalebone (by Waxy and Penelope).	6 Waxy.
	6 Penelope.
5. **Faugh-a-Ballagh** by Sir Hercules	Dam 2 Bagot (by Herod).
1841. 5 Woodpecker (by Herod).	
6 Eclipse.	
6. **Leamington** 6 Woodpecker.	Dam 4 Buzzard (by Woodpecker).
1853. 6 Alexander (by Eclipse).	4 Mare by Alexander.
7. **Onondaga** 7 Buzzard (by Woodpecker).	Dam 7 Dick Andrews.
1879. 7 Mare by Alexander.	Grand-dam 2 Tramp.
	4 Buzzard.
8. **Locohatche** 3 Lexington.	Dam 4 Pocahontas (by Glencoe).
1889. 6 Glencoe.	
9. **Caiman** 5 Stockwell.	Dam 2 Stockwell.
1896.	

Sire line	Sire side	Dam side
8. **Doncaster** by Stockwell 1870.	6 Blacklock. 7 Whalebone. 7 Selim.	Dam 4 Humphrey Clinker. 6 Selim.
9. **Bend Or** 1877.	6 Touchstone. 6 Muley. 7 Selim (by Buzzard).	Dam 6 Orville. 6 Buzzard.
10. **Ormonde** 1883.	5 Birdcatcher. 5 Pantaloon (by Castrel). 7 Banter (Dam of Touchstone).	Dam 6 Blacklock. 6 { Selim. Castrel.
11. **Orme** 1889.	5 Pocahontas (by Glencoe). 6 Birdcatcher.	Dam 6 Sultan (Sire of Glencoe). 6 Velocipede's dam.
12. **Flying Fox** 1896.	1 Galopin (by Vedette). 6 Stockwell. 7 Pocahontas.	Dam 2 Vedette. 6 Birdcatcher.
13. **Ajax** 1901.	6 Flying Dutchman.	Dam 5 Flying Dutchman. 6 Pocahontas.

Sire line	Sire side	Dam side
8. **St. Albans** by Stockwell 1857.	6 Whalebone.	Dam 6 Sir Peter. 6 Stamford. 6 Woodpecker.
9. **Springfield** 1873.	6 Sultan (by Selim). 6 Camel (by Whalebone). 6 Banter.	Dam 4 Camel. 4 Langar (by Selim). 5 Selim.
10. **Sainfoin** 1887.	2 Stockwell. 6 Touchstone.	Dam 3 The Baron } Parents of 3 Pocahontas } Stockwell.

Sire line	Sire side	Dam side
8. **Lord Lyon** by Stockwell 1863.	6 Selim. 6 Whalebone (by Waxy). 7 Orville.	Dam 5 Selim. 5 Waxy. 6 Orville.
9. **Minting** 1883.	5 Birdcatcher. 7 { Selim. 5 Touchstone. Castrel. 5 Glencoe.	Dam 7 Castrel.

Sire line	Sire side	Dam side
8. **Lord Ronald** by Stockwell 1862.	6 Whalebone. 7 Selim. 7 Orville.	Dam 5 Whalebone. 6 Selim.
9. **Master Kildare** 1875.	4 Birdcatcher.	Dam 6 Blacklock.
10. **Melton** 1882.	3 Stockwell. 5 Touchstone.	Dam 3 Touchstone 4 Pantaloon.

10. Kendal by Bend Or — Dam 7 Buzzard (Grand-sire of Pantaloon).
1883. 4 Birdcatcher.
5 Pantaloon.

11. Galtee More 3 Thormanby. — Dam 5 Pantaloon (Grand-sire of Thormanby).
1894. 4 Stockwell.

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10. Bonavista by Bend Or — Dam 4 Banter. 4 Pantaloon.
1889. 4 Pocahontas. 5 Alice Hawthorn.
5 Windhound. 7 Touchstone.
(by Pantaloon).

11. Cyllene 4 Stockwell. — Dam 6 Touchstone.
1895. 5 Newminster (by Touchstone).

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3. **Whisker** by Waxy — Dam 3 Snap. 6 Partner (Grand-sire of Herod). 6 Godol. Arabian.
1812. 3 Herod.
4 Snap.
6 Cade (by Godol. Arabian).

4. **The Colonel** 3 Highflyer. — Dam 5 Tartar. 5 Blank. 6 Regulus (Grand-sire of Eclipse).
1825. 4 Herod (by Tartar).
4 Eclipse.
7 Blank.

5. **Cap-a-Pie** 2 Waxy. — Dam 5 Eclipse (Grand-sire of Waxy).
1837.

6. **Sir Hercules** 4 Waxy (by Pot8os). — Dam 4 Pot8os.
1843. 4 Penelope.

1861. 6 Waxy. — Dam 4 Whiskey.
7. **Yattendon** 4 Partisan.

8. **Grand Flaneur** 6 Sir Hercules (by Whalebone). — Dam 4 Pantaloon. 5 Camel (by Whalebone).
1877.

9. **Patron** 4 Stockwell. — Dam 2 Fisherman. 4 Melbourne. 4 Bay Middleton. 5 Marpessa (Grand-dam of Stockwell).
1890. 6 Melbourne.

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9. **Merman** by Grand Flaneur — Dam 5 Bay Middleton (by Sultan, Grand-sire of Pocahontas).
1892. 5 Pocahontas.
5 Sir Hercules.

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8. **Chester** by Yattendon — Dam 3 Economist (by Whisker). 5 Orville.
1874. 5 Sir Hercules. 6 Sultan.
5 Emilius (by Orville). 6 Whisker.

9. **Abercorn** 4 Paraguay (by Sir Hercules). — Dam 4 Sir Hercules.
1884.

3. **Whisker** by Waxy — Dam 3 Snap.
1812. 3 Herod. — 6 Partner (Grand-sire of Herod).
4 Snap. — 6 Godol. Arabian.
6 Cade (by Godol. Arabian).

4. **Economist** 4 Herod. — Dam 3 Herod.
1825. 4 Eclipse. — 4 Eclipse.
5 Highflyer.

5 **Harkaway** 5 PotSos (by Eclipse). — Dam 4 Highflyer (by Herod).
1834. 6 Highflyer.
7 Herod.

6. **King Tom** 5 Waxy (by Pot8os). — Dam 5 Gohanna (by Mercury).
1851. 5 Penelope. — 6 Mercury (by Eclipse).

7. **Phaeton** 6 Orville. — Dam 1 Touchstone.
1865. 7 Waxy. — 5 Orville.
7 Penelope. — 5 Castrel.
6 {Castrel. Selim.}

8. **King Alfonso** 3 Glencoe. — Dam 5 Orville.
1872. 5 Muley (by Orville).

9. **Foxhall** 3 Vandal (by Glencoe). — Dam 7 Orville.
1878.

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1. **Mercury** by Eclipse
1778. 4 Godol. Arabian.

2. **Gohanna** 2 Tartar (by Partner). — Dam 3 Partner.
1790. 4 Squirt. — 4 {Bartl. Childers. Flying Childers.}
5 Mogul (by Godol. Arabian).
6 Godol. Arabian.
6 {Bartl. Childers. Flying Childers.}

3. **Golumpus** 2 Herod (by Tartar). — Dam 4 Godol. Arabian.
1802. 5 Cade (by Godol. Arabian). — 5 Partner.

4. **Catton** 4 Herod. — Dam 3 Herod.
1809. 4 Eclipse. — 6 Godol. Arabian.
5 Matchem (by Cade). — 6 Blank.
6 Regulus.

5. **Mulatto** 5 Florizel (by Herod). — Dam 2 Highflyer.
1823. 5 Highflyer. — 5 Marske.
6 Herod.
6 Eclipse.

1. **King Fergus** by Eclipse
1775.
5 { Bartl. Childers. / Flying Childers.
6 Bay Bolton.

2. **Beninghbrough** 3 Tartar (by Partner). — Dam 3 Partner.
1791. 4 Miss Slamerkin. — 5 Fl. Childers.
6 { Bartl. Childers. / Flying Childers. — 5 Confederate Filly.
6 Godol. Arabian.

3. **Orville** 2 Herod (by Tartar). — Dam 4 Regulus.
1799. 6 Regulus (by Godol. Arabian). — 4 Blaze (by Childers).
4 Godol. Arabian.

4. **Emilius** 3 Highflyer (by Herod). — Dam 3 Eclipse.
1820. 4 Eclipse. — 4 Herod.
6 Blank (by Godol. Arabian). — 4 Blank.

5. **Priam** 5 Whiskey. — Dam 3 Herod.
1827. 5 Herod. — 4 Matchem.
5 Eclipse.

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2. **Hambletonian** by King Fergus — Dam 4 Godol. Arabian.
1792. 4 Tartar. 5 Regulus.
6 God. Arabian. 5 Crab.

3. **Whitelock** 3 Herod (by Tartar). — Dam 4 Partner (Sire of Tartar).
1803. 3 Eclipse.
3 Matchem.

4. **Blacklock** 3 Highflyer. — Dam 1 Pot8os (by Eclipse).
1814. 4 Herod. — 2 Herod.
4 Eclipse.

5. **Voltaire** 4 King Fergus (by Eclipse). — Dam 4 Highflyer.
1826. 5 Highflyer. — 5 Eclipse.

6. **Velocipede** 5 Highflyer. — Dam 5 Eclipse.
1825. 5 Pot8os. — 6 Herod.
7 Matchem. — 6 Matchem.

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5. **Brutandorf** by Blacklock — Dam 4 Cade.
1821. 2 Pot8os.
5 Herod.

6. **Hetman Platoff** 4 Pot8os (by Eclipse). — Dam 2 Sir Peter.
1837. 4 Coriander (by Pot8os). — 5 Eclipse.
5 Eclipse.

7. **The Cossack** 5 Y. Giantess. — Dam 4 Y. Giantess.
1844. 5 Sorcerer. — 6 Sir Peter.
5 Stamford (by Sir Peter). — 7 Eclipse.
7 Eclipse.

6. **Voltigeur** by Voltaire — Dam 4 Sir Peter.
1847. 5 Hambletonian (by King Fergus). — 6 King Fergus.
6 Sir Peter (by Highflyer).
7 Highflyer.
6 Coriander.

7. **Vedette** 3 Blacklock. — Dam 6 Pot8os.
1854. 6 Walton (by Sir Peter).

8. **Galopin** 2 Voltaire (by Blacklock). — Dam 4 Phantom (by Walton).
1872. — 6 Pot8os.

9. **St. Simon** 6 Sultan (by Selim). — Dam 6 Selim.
1881. 6 Velocipede's dam.
7 Blacklock.

10. **St. Florian** 5 Ion. — Dam 5 Bay Middleton.
1891. 6 Bay Middleton (by Sultan). — 5 Touchstone.

11. **Ard Patrick** 5 Cowl (by Bay Middleton). — Dam 5 Pantaloon.
1899. 6 Pocahontas. — 6 Sultan (Grand-sire of Pocahontas).

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10. **Matchbox** by St. Simon — Dam 3 Orlando
1891. 6 Bay Middleton (by Sultan). — (3 Selim).

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10. **Persimmon** by St. Simon — Dam 3 Melbourne.
1893. 5 Voltigeur (by Voltaire and Martha Lynn). — 6 Voltaire.
6 Pocahontas. — 6 Martha Lynn.

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10. **St. Frusquin** by St. Simon — Dam 6 Touchstone.
1893. 6 Bay Middleton (by Sultan). — 6 Emma.

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9. **Donovan** by Galopin — Dam 3 Touchstone.
1886. 5 Bay Middleton (by Sultan). — 5 Muley.
5 Birdcatcher. — 6 Sultan.

10. **Velasquez** 5 Pocahontas. — Dam 4 Banter (Dam of Touchstone).
1894. 5 Touchstone.

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8. **Speculum** by Vedette — Dam 4 Orville.
1865. 6 Orville.

9. **Rosebery** 3 Touchstone. — Dam 5 Orville.
1872. 6 Orville (by Beningbrough). — 6 Beningbrough.

Horse	Inbreeding (sire side)	Dam
1. **Joe Andrews** by Eclipse		
1778.	4 Godol. Arabian.	
	5 Bartl. Childers.	
2. **Dick Andrews**	4 Blank (by Godol. Arabian).	Dam 3 Blank.
1797.	5 Regulus.	6 Flying Childers.
	6 Snip (by Flying Childers).	
3. **Tramp**	3 Eclipse.	Dam 3 Eclipse.
1810.	4 Herod.	3 Herod.
4. **Liverpool**	4 Eclipse.	
1828.	5 Highflyer (by Herod).	Dam 1 Pot8os (by Eclipse).
	5 Woodpecker.	4 Herod.
	5 Trentham.	
	6 Herod.	
5. **Lanercost**	4 Gohanna.	Dam 3 Woodpecker.
1835.	5 Woodpecker.	4 Herod.
	5 Highflyer (by Herod).	
	5 Trumpator.	
	6 Eclipse.	
6. **Van Tromp**	5 Buzzard (by Woodpecker).	Dam 6 Woodpecker.
1844.	5 Pot8os (by Eclipse).	6 Eclipse.
		6 Herod.

Horse	Inbreeding (sire side)	Dam
4. **Lottery** by Tramp		Dam 4 Cade.
1820.	3 Eclipse.	4 Sister to Regulus.
	4 Trentham.	Regulus.
	4 Woodpecker.	
	5 Herod.	
5. **Sheet Anchor**	5 Woodpecker (by Herod).	Dam 6 Herod.
1832.	6 Eclipse.	6 Eclipse.
	6 Mercury.	
	6 Mare by Herod.	
6. **Weatherbit**	5 Orville.	Dam 1 Orville.
1842.	5 Y. Giantess.	6 Herod.
	6 Woodpecker (by Herod).	
7. **Beadsman**	3 Tramp.	Dam 6 Buzzard.
1855.	5 Orville.	
	7 Buzzard (by Woodpecker).	
8. **Rosicrucian**		Dam 4 Phantom.
1865.	4 Priam (Grand-son of Orville).	6 Buzzard.
	5 Whalebone.	
	7 Selim.	
9. **Beauclerc**	6 Whalebone.	Dam 5 Walton.
1875.		
10. **Chislehurst**	6 Partisan (by Walton).	Dam 5 Orville.
1880.	7 Whalebone.	6 Waxy } Parents of
	8 Orville.	6 Penelope } Whalebone.

Herod Line.

Horse	Sire's side	Dam's side
1. **Highflyer** by Herod 1774.	5 Sister to Mixbury. 4 { Bartl. Childers. / Flying Childers.	Dam 1 Godol. Arabian.
2. **Sir Peter** 1784.	3 Regulus. 4 Godol. Arabian. 5 Flying Childers.	Dam 3 { Bartl. Childers. / Flying Childers.
3. **Sir Paul** 1802.	4 Regulus (by Godol. Arabian). 5 Snip (by Flying Childers).	Dam 3 Regulus. 4 Godol. Arabian. 5 Flying Childers.
4. **Paulowitz** 1813.	1 Highflyer. 1 Termagant (by God. Arabian). 6 Regulus.	Dam 4 Regulus. 4 Godol. Arabian.
5. **Cain** 1822.	3 Highflyer. 6 Godol. Arabian.	Dam 5 Highflyer.
6. **Ion** 1835.	3 Evelina (by Highflyer). 5 Sir Peter (by Highflyer).	Dam 5 Highflyer.
7. **Wild Dayrell** 1852.	4 Selim. 7 Sir Peter.	Dam 6 Sir Peter.
8. **Buccaneer** 1857.	3 Edmund (by Orville). 5 Paynator.	Dam 4 Beningbrough (Sire of Orville).
9. **Flibustier** 1867.	5 Tramp. 6 Sultan. 7 Orville.	Dam 5 Tramp. 6 Orville.
10. **Trachenberg** 1879.	7 Bustard. 8 Orville. 8 Whalebone. 8 Selim (by Buzzard).	Dam 3 Camel (by Whaleb.). 6 Buzzard (Grand-sire of Bustard and Sultan). 6 Selim.
11. **Hannibal** 1891.	4 Touchstone. 4 Stockwell. 6 Ion.	Dam 3 Touchstone 5 Camel. 7 Sultan. Grand-dam 4 Camel. 4 Touchstone.
12. **Fels** 1903.	3 Hermit. 7 Ion. 7 Pocahontas.	Dam 5 Voltigeur. 6 Ion. Grand-dam 4 Touchstone.

3. **Walton** by Sir Peter 1799.	3 Snap. 4 Regulus. 3 Herod. 6 Partner.	Dam 3 Regulus. 5 Partner.
4. **Partisan** 1811.	2 Highflyer (by Herod). 3 Eclipse. 4 Snap. 6 Regulus.	Dam 5 Regulus. 6 Godol. Arabian.
5. **Gladiator** 1833.	4 Prunella (by Highflyer). 4 Pot8os (by Eclipse).	Dam 4 Trumpator. 5 Pot8os. 6 Eclipse. 6 Highflyer.
6. **Sweetmeat** 1842.	4 Walton (by Sir Peter). 6 Pot8os. 7 Highflyer.	Dam 0 Blacklock. 6 Sir Peter (by Highflyer).
7. **Parmesan** 1857.	6 Waxy (by Pot8os). 6 Penelope.	Dam 3 Waxy. 3 Penelope.
8. **Favonius** 1868.	6 Whisker (by Waxy and Penelope).	Dam 5 Whisker.

7. **Macaroni** by Sweetmeat 1860.	6 Sir Peter. 6 Orville (Grand-son of Highflyer). 6 Buzzard. 6 Mare by Alexander.	Dam 3 Alexander. 4 Buzzard. 4 Highflyer. 5 Sir Peter (by Highflyer).

6. **Fitz Gladiator** by Gladiator 1850.	5 Buzzard. 5 Mare by Alexander (by Eclipse). 5 Sir Peter (by Highflyer). 5 Gohanna.	Dam 4 Sir Peter. 6 Eclipse. 6 Herod.
7. **Compiegne** 1858.	6 Whalebone. 7 Buzzard. 7 Mare by Alexander. 7 Sir Peter. 7 Beningbrough. 7 Gohanna. 7 Pot8os.	Dam 6 Sir Peter. 6 Beningbrough. 6 Waxy (by Pot8os).
8. **Mortemer** 1865.	4 Partisan (by Walton). 6 Orville.	Dam 1 Emilius (by Orville). 6 Sir Peter (Sire of Walton).
9. **Chamant** 1874.	5 Emilius (by Orville). 6 Orville.	Dam 5 Orville. 5 Selim. Grand-sire 4 Orville.
10. **Saphir** 1888.	4 Pocahontas. 6 Touchstone. 6 Gladiator. 7 Emilius.	Dam 6 Touchstone. Grand-sire 2 Pocahontas. Grand-dam 1 Touchstone.
11. **Desir** 1904.	5 Pocahontas. 5 Stockwell.	Dam 3 Stockwell.

Horse	Sire side	Dam side
1. **Florizel** by Herod 1768.	4 Flying Childers. 7 Byerly Turk.	Dam 3 Flying Childers. 5 Basto (by Byerly Turk).
2. **Diomed** 1777.	4 Partner. 4 Godol. Arabian. 4 Crab. 5 Flying Childers (by Darley Arabian).	Dam 5 Darley Arabian.
3. **Sir Archy** 1805.	3 Herod. 5 Blank (by Godol. Arabian). 7 Childers.	Dam 6 Godol. Arabian. 6 Regulus.
4. **Timoleon** 1814.	5 Trentham. 7 Blank (by Godol. Arabian). 7 Squirt.	Dam 4 Regulus (by Godol. Arabian).
5. **Boston** 1833.	2 Diomed. 5 Eclipse. 6 Marske (by Squirt).	Dam 5 Marske.
6. **Lexington** 1850.	3 Sir Archy (by Diomed). 6 Saltram (by Eclipse).	Dam 6 Highflyer (by Herod). Grand-sire of Diomed).
7. **Norfolk** 1861.	5 Sir Archy. 5 Sumpter.	Dam 5 Buzzard. 6 Waxy. Grand-dam 2 Sir Archy.

Horse	Sire side	Dam side
2. **Buzzard** by Woodpecker 1787.	3 Cade (by Godol. Arabian). 5 Partner. 6 Flying Childers. 7 Bald Galloway.	Dam 4 Godol. Arabian. 6 Bald Galloway.
3. **Selim** 1802.	3 Herod. 5 Matchem (by Cade). 6 Regulus (by Godol. Arabian).	Dam 5 Regulus. 6 Godol. Arabian.
4. **Sultan** 1816.	4 Herod. 4 Highflyer 4 Eclipse.	Dam 3 Herod. 3 Eclipse.
5. **Glencoe** 1831.	5 Mercury (by Eclipse). 6 Eclipse. 6 Herod. 6 Highflyer.	Dam 4 Eclipse. 4 Highflyer. 5 Herod.
6. **Vandal** 1850.	7 Pot8os (by Eclipse). 8 Highflyer. 8 Herod.	Dam 7 Highflyer.
7. **Virgil** 1864.	4 Tramp. 6 Orville.	Dam ?.
8. **Hindoo** 1878.	6 Emilius (by Orville). 7 Tramp.	Dam 5 Emilius. 6 Orville.
9. **Hannover** 1884.	2 Vandal (by Glencoe). 7 Emilius (5. Orville).	Dam 7 Orville.
10. **Hamburg** 1895.	4 Lexington. 6 Glencoe.	Dam 3 Lexington. 5 Glencoe.

Horse	Sire's side	Dam's side
3. **Castrel** by Buzzard 1801.	3 Herod. 5 Matchem. 6 Regulus (by Godol. Arabian).	Dam 5 Regulus. 6 Godol. Arabian.
4. **Pantaloon** 1824.	4 Highflyer. 4 Eclipse. 5 Herod.	Dam 2 Highflyer. 3 Eclipse.
5. **Windhound** 1847.	3 Peruvian (by Sir Peter). 5 Mare by Alexander (by Eclipse). 5 Buzzard.	Dam 4 Waxy.
6. **Thormanby** 1857.	6 Orville (by Beningbrough). 7 Woodpecker (by Herod).	Dam 3 Dick Andrews. 4 Beningbrough. } Parents of 4 Evelina (by Highflyer). } Orville.
7. **Atlantic** 1871.	7 Orville. 7 Buzzard (by Woodp.) } Parents of 7 Mare by Alexander } Selim.	Dam 3 Sultan (by Selim).
8. **Le Sancy** 1884.	3 Windhound. 3 Alice Hawthorn. 5 Touchstone.	Dam 4 Touchstone (Grand-sire of Windhound). Grand-sire 2 Touchstone. Grand-dam 2 Pantaloon (Sire of Windhound).
9. **Le Sagittaire** 1892.	2 Strathconan. 6 Melbourne.	Dam 5 Touchstone. 5 Melbourne.
10. **Maintenon** 1903.	5 Newminster. 5 Stockwell. 7 Melbourne.	Dam 6 Touchstone.

Horse	Sire's side	Dam's side
9. **Le Justicier** by Le Sancy 1892.	6 Touchstone.	Dam 3 Gladiator. 5 Touchstone.

Horse	Sire's side	Dam's side
5. **Bay Middleton** by Sultan 1833.	4 Sir Peter (by Highflyer). 4 Arethusa. 7 Eclipse.	Dam 3 Y. Giantess. 5 Highflyer. 6 Eclipse.
6. **The Flying Dutchman** 1846.	3 Selim. 6 Sir Peter (by Highflyer).	Dam 5 Highflyer. 5 Eclipse.
7. **Dollar** 1860.	4 Catton. 6 Beningbrough. 6 Evelina. 7 Sir Peter. 7 Sorcerer.	Dam 5 Sorcerer. 6 Beningbrough.

Matchem Line.

1. **Trumpator** by Conductor (by Matchem)		Dam 4 Partner.
1782.	4 Partner.	
	4 Godol. Arabian.	
2. **Sorcerer** 2 Matchem.		Dam 5 Godol. Arabian } Grand-sire of
1796.	[6 Partner.	5 Partner } Matchem.
	6 Godol. Arabian.]	
3. **Comus** 5 Herod (by Tartar).		Dam 5 Blank (by Godol. Arabian).
1809.	5 Snap.	5 Tartar (by Partner).
	6 Cade (by Godol. Arabian).	5 Regulus (by Godol. Arabian).
	6 Eclipse.	
4. **Humphrey Clinker** 2 Sir Peter (by Highf.).		Dam 5 Regulus.
1822.	4 Trumpator.	6 Snip.
	7 Eclipse.	
5. **Melbourne** 4 Termagant.		Dam 4 Eclipse.
1834.	5 Highflyer (by Herod).	5 Herod.
	5 Trumpator.	
	6 Eclipse.	
6. **West Australian** 6 Trumpator.		Dam 3 Waxy.
1850.	6 Evelina (by Highflyer).	3 Penelope (by Trumpator).
	7 Eclipse.	6 Sir Peter.
	7 Sir Peter (by Highflyer).	6 Eclipse.
7. **Solon** 5 Whalebone (by Waxy).		Dam 5 Waxy.
1861.	5 Comus (Grand-son of Trumpator).	6 Pot8os.
	6 Waxy.	7 Trumpator.
	6 Penelope (by Trumpator).	
8. **Barcaldine** 1 Darling's dam (by Bird-catcher).		Dam 3 Birdcatcher.
1878.	5 Touchstone.	
9. **Morion** 5 Touchstone.		Dam 4 Priam.
1887.	7 Whalebone.	5 Whalebone.

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9. **Sir Visto** by Barcaldine		Dam 4 Banter.
1892.	5 Newminster.	4 Pantaloon.
	5 Pocahontas.	
	6 Banter.	

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3. **Smolensko** by Sorcerer		Dam 1 Herod.
1810.	4 Herod.	3 Snap.
	5 Snap.	
	6 Cade.	
4. **Jerry** 5 Herod.		Dam 5 Herod.
1821.	6 Matchem (by Cade).	5 Matchem.

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2. **Paynator** by Trumpator 3 Snap (by Snip).		Dam 3 Godol. Arabian.
1791.	5 Godol. Arabian.	4 Mare by Basto (Dam of Snip).
3. **Dr. Syntax** 5 Matchem (by Cade).		Dam 5 Cade.
1811.	6 Snip.	5 Regulus (by Godol. Arabian).
	6 Cade (by Godol. Arabian).	7 Mare by Basto (Dam of Snip and Crab).
	7 Crab.	

A few of the chief lines in American Trotters.

1. Messenger xx born Engl. 1780 by Mambrino xx — Turf xx.
   3 Cade (by Godol. Arabian), Dam: 3 Godol. Arabian, 5 Bay Bolton.
2. Mambrino xx? born Amer. 1806 by Messenger xx — Soucrout xx.
   5 Cade (by Godol. Arabian), Dam: 3 Godol. Arabian, Grand-dam: 3 Godol. Arabian.
3. Abdallah I. born Amer. 1823 by Mambrino xx? and Amazonia.
   1 Messenger xx, Dam: ?.
4. Hambletonian (10) 1849 by Abdallah I. and Charles Kent Mare.
   3 Messenger xx, Dam: ?, Grand-dam: 0 Messenger xx.
5. George Wilkes (519) 1856 by Hambletonian (10) and Dolly Spanker.
   Rek. 2,22 (insufficient pedigree of the Dam).
6. Patchen Wilkes (3550) 1882 by George Wilkes and Kitty Patchen.
   Rek. 2,29½. 5 Mambrino xx? Dam: — 1 Mambrino Patchen (Great Grand-son of Mambrino. Grand-dam: 0 Mambrino Chief (Sire of Mambrino Patchen).
7. Joe Patchen (30239) 1889 by Patchen Wilkes and Josephine.
   Rek. 2,01¼ p. (insufficient pedigree of the Dam).
8. Dan Patch (37323) 1896 by Joe Patchen and Zelica.
   Rek. 1,56¼ p. 3 George Wilkes (by Hambletonian [10]). Dam: 4 Hambletonian (10).

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1. Hambletonian (10) 1849 by Abdallah I. and Charles Kent Mare.
   3 Messenger xx, Dam: ?, Grand-dam: 0 Messenger xx.
2. Electioneer (125) 1868 by Hambletonian (10) and Green Mountain Maid.
   3 Abdallah I, Dam: ?.
3. Mendocino (22607) 1889 by Electioneer and Mano.
   3 Hambletonian (10). Dam: 4 Hambletonian (10).
4. Idolita 1896 by Mendocino and Edith.
   Rek. 2,09¼. 2 Hambletonian (10), Dam: 5 Mambrino (Grand-sire by Hambletonian).

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1. Hambletonian (10) 1849 by Abdallah I. and Charles Kent Mare.
   3 Messenger xx, Dam: ?, Grand-dam: 0 Messenger xx.
2. Harold (413) 1864 by Hambletonian (10) and Enchantress.
   (Sire of Maud S. born 1874. Rek. 2,08¾) 0 Abdallah I, 2 Bellfoundez xx? Dam: ?.
3. Vasco (10996) 1882 by Harold and Vassar.
   2 Hambletonian (10) (by Abdallah I). Dam: ?.

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1. Baron Wilkes (4758) 1882 by George Wilkes and Belle Patchen.
   Rek. 2,18. 5 Mambrino xx? (Grand-sire by Mambr. Chief), Dam: 1 Mambr. Chief.
2. Moko (24457) 1893 by Baron Wilkes and Queen Ethel.
   2 Hambletonian (10). Dam: 1 Hambletonian (10).
3. Franko (33991) 1899 by Moko and Fraulet.
   4 Hambletonian (10), 6 Mambrino Chief, Dam: 2 Hambletonian (10), 5 Mambrino Chief.

1. Hambletonian (10) 1849 by Abdallah I. and Charles Kent Mare.
   3 Messenger xx, Dam: ?, Grand-dam: 0 Messenger xx.
2. Abdallah (15) 1852 by Hambletonian (10) and Katy Darling.
   5 Mambrino xx?, Dam: ?.
3. Major-Edsall (211) 1859 by Abdallah (15) — Hambletonian (2).
   Rek. 2,29. 5 Messenger xx, Dam: ? (0 Messenger xx).
4. Robert McGregor (647) 1871 by Major-Edsall (211) and Nancy Whitmann.
   Rek. 2,18. 6 Messenger xx, Dam: 6 Messenger xx.
5. Crescens (26217) 1894 by Robert McGregor (647) and Mabel.
   Rek. 2,02¼. 4 Abdallah (15), Dam: 2 Mambrino Chief (11), Grand-sire: (Allie West), 1 Mambrino Chief (11).

A few examples of Russian Trotters.

Polkan III. 1817 by Lofki I., his best son Duschak 1825.
2 Bars I (born 1784). 3 Bars I.

Suriosni I. 1806 by Lubesni I., his best son Ladin 1821.
0 Bars I. 2 Bars I.

Scharodei III. 1862 by Polkan, his best son Lofki 1874.
4 Bars (born 1835). 3 Barsik (by Bars). Dam: 3 Bars.

The question of inbreeding in the case of mares is less easy to handle than in the case of stallions, because there are so many of them, and secondly, because a dam can only produce a limited number of foals.

I have only found the four following examples for a coarse inbreeding, *i.e.*, incest breeding, with —1 free generation :—

1. Bay Peg born about 1690 by Leedes Arabian and Y. Bald Peg by Leedes Arabian, was the dam of the two celebrated sires, Basto 1702 by Byerly Turk, and Fox 1714 by Clumsey.

2. A mare born about 1690 by Spanker and Old Peg (Spanker's dam), produced five celebrated foals, amongst them Jigg by Byerly Turk, and Cream Cheeks, grandmother of the two Childers (see Family 6).

3. Old Lady born about 1702 by Pulleine's Chesnut Arabian — Pulleine's Chesnut Arabian, foundation mare of the Fam. 24 (Gohanna, Camel, The Baron).

4. A mare born about 1730 by Heneage's Jigg and the dam of Heneage's Jigg by Jigg, produced one filly of which there are no further reports, and six colts which became good racehorses, amongst them Hunt's Jigg (page 234), who also was bred with —1 free generation.

Of the many mares with 0 and 1 free generation which have been successful at the stud or have been prominent performers on the racecourse, the following may be mentioned :—

Mares with 0 Free Generation.

No.	Names of Mares and their Families		Born	Sire	Dam
1	Bess 0 Pot8os 6 Godol. Arabian 6 Partner	Fam. 3 a	1806	Waxy 5 Godol. Arabian 6 Partner	Vixen 3 Regulus (by Godol. Arabian) 5 Bart. Childers 6 Partner
2	Brown Russet 0 Highflyer 0 Papillon	Fam. 3	1802	Sir Peter 3 Regulus 4 Godol. Arabian 5 Flying Childers 5 Fox	Brown Bess 3 Regulus 4 Godol. Arabian 5 Flying Childers 5 Fox
3	Butterfly 0 Bagot 5 Cade (by Godol. Arabian) 6 Godol. Arabian	Fam. 4	1804	Master Bagot 5 Godol. Arabian	Mare by Bagot 3 Cade 4 Partner
4	Chesnut Skim 0 Herod 6 Bay Bolton	Fam. 5 b	1794	Woodpecker 6 Darley Arabian	Mare by Herod 4 Flying Childers 5 Sister to Mixbury
5	Goldenlocks 0 Crab	Fam. 38	1758	Oroonoko ?	Mare by Crab ?
6	Grey Skim 0 Herod	Fam. 5 b	1793	Woodpecker 6 Darley Arabian	Mare by Herod ?
7	Harlot 0 Herod 5 Godol. Arabian	Fam. 45	1783	Highflyer 4 Darley Arabian 4 Betty Leedes	Mare by Herod 3 Partner (Grand-sire of Herod)
8	Juliana 0 Mercury 2 Herod (by Tartar)	Fam. 5 b	1810	Gohanna 2 Tartar 5 Mogul 6 Godol. Arabian	Platina O. 2 Tartar
9	Lollypop 0 Blacklock 6 Sir Peter (by Highflyer)	Fam. 21	1836	(Starch) or Voltaire 4 King Fergus 5 Highflyer	Belinda 5 King Fergus 5 Highflyer 6 Eclipse 6 Herod
10	Margaretta 0 Highflyer 5 Regulus (by Godol. Arabian) 7 Flying Childers 7 Fox	Fam. 2 c	1802	Sir Peter 3 Regulus 4 Godol. Arabian 5 Flying Childers 5 Fox	Mare by Highflyer 4 Godol. Arabian 4 Partner
11	Miss Elliot 0 Partner	Fam. 23	About 1756	Grisewood's Partner ?	Cälia ?

No.	Names of Mares and their Families	Born	Sire	Dam
12	Old Lady Fam. 17 0 Bald Galloway	About 1715	Bald Galloway ?	The Wharton Mare ?
13	Mare Fam. 15 0 Little Hartley Mare	1763	Shakspeare ?	Miss Meredith ?
14	Valentine Fam. 12 a 0 Mare by Phantom (Dam by Voltaire) 6 Pot8os (by Eclipse) 7 Highflyer	1833	Voltaire 4 King Fergus (by Eclipse) 5 Highflyer	Fisher Lass 4 Sir Peter (by Highflyer) 4 Y. Giantess 6 Eclipse
15	Mare Fam. 24 0 Herod 3 Cade	1798	Woodpecker 6 Darley Arabian	Mare by Herod 3 Partner 4 { Bartl. Childers Flying Childers }
	Mares with 1 Free Generation.			
1	Bellissima O. Fam. 3 1 Herod 5 Regulus (by Godol. Arabian) 6 Fox	1795	Phoenomenon 7 Darley Arabian 7 Fox	Wren 4 Godol. Arabian
2	Blood Red Fam. 1 c 1 Ellen Horne 5 Touchstone 7 { Castrel Selim }	1875	Lord Lyon 6 Whalebone 6 Selim	Rouge Rose 6 Orville 4 { Castrel Selim }
3	Charmer Fam. 4 1 Herod 5 Regulus (by Godol. Arabian)	1790	Phoenomenon 7 Darley Arabian 7 Fox (Grand-sire of Herod)	Mare by Fitz Herod 3 Miss Partner 3 Cade (by Godol. Arabian) 4 Partner
4	Comtesse Fam. 1 1 Emilius 6 Sir Peter (by Highflyer) 6 Delpini	1855	(The Baron) or Nuncio 5 Sir Peter 5 Delpini 6 King Fergus 6 Highflyer	Eusebia 5 Highflyer 5 King Fergus
5	Mare Fam. 2 1 Pot8os 2 Herod 5 Snap 6 Regulus (by Godol. Arabian)	1799	Coriander 4 Cade (by Godol. Arabian) 6 Partner (Grandsire of Herod)	Wildgose 4 Blank (by Godol. Arabian) 5 Godol. Arabian 5 Little Hartley Mare 5 Regulus

No.	Names of Mares and their Families	Born	Sire	Dam
6	Flora Fam. 31 1 Godol. Arabian	1768	Lofty ?	Riot ?
7	Fortress 1 Whalebone 4 Highland 5 Buzzard 6 Woodpecker	1836	Defence 5 Herod 5 Highflyer 5 Eclipse	Jewess 5 Mare by Herod 5 Mercury (by Eclipse) 5 Woodpecker 6 Highflyer 6 Eclipse
8	The Jewel Fam. 28 1 Birdcatcher 5 Muley (by Orville) 8 Gohanna	1864	Stockwell 5 Orville 6 Waxy 6 Penelope (by Trumpator)	July 5 Waxy 6 PotSos 6 Prunella 6 Gohanna 7 Trumpator
9	Lizzie G. Fam. 23 a 1 Reel (by Glencoe) 2 Boston	1857 in America	War Dance 4 The Baron 7 Banter	Mare by Lecompte 2 Glencoe
10	Mandragora Fam. 4 b 1 Birdcatcher 7 Orville	1860	Rataplan 5 Orville 6 Waxy 6 Penelope	Manganese 7 Sir Peter 7 Trumpator
11	Maria Fam. 23 1 Herod 3 Regulus 4 Godol. Arabian 7 Bart. Childers (by Darley Arabian)	1791	Highflyer 5 Sister to Mixbury 6 Darley Arabian	Maria 4 Godol. Arabian 4 Starling 5 Crab 6 Flying Childers
12	Milliner Fam. 4 b 1 Birdcatcher 7 Orville	1869	Rataplan 5 Orville 6 Waxy 6 Penelope	Manganese 7 Sir Peter 7 Trumpator
13	Minaret Fam. 4 b 1 Birdcatcher 7 Orville	1866	Rataplan 5 Orville 6 Waxy 6 Penelope	Manganese 7 Sir Peter 7 Trumpator
14	Mineral Fam. 4 1 Birdcatcher 7 Orville	1863	Rataplan 5 Orville 6 Waxy 6 Penelope	Manganese 7 Sir Peter 7 Trumpator
15	Miss Letty O. Fam. 12 1 Orville 6 Herod 6 Eclipse	1831	Priam 2 Whiskey 5 Herod 5 Eclipse	Mare by Orville 4 Herod 4 {Eclipse, Proserpine}

No.	Names of Mares and their Families	Born	Sire	Dam
16	Mare Fam. 3 1 Camel 4 Selim	1853	Orlando 3 Selim 5 Alexander	Brown Bess 4 Pot8os
17	Palma Fam. 12 1 Orville 4 Sir Peter (by Highflyer) 6 Eclipse	1840	Emilius 3 Highflyer 4 Eclipse	Francesca 4 Highflyer 5 Eclipse
18	Pazmanita Fam. 1 a 1 Newminster	1875	Hermit 4 Camel	Nyl Gau 2 Touchstone
19	Mare Fam. 24 1 Herod 5 Squirt 7 Godol. Arabian	1788	Phoenomenon 7 Darley Arabian (Grand-sire of Squirt) 7 Fox	Matron 4 Partner 4 Godol. Arabian
20	Rachel Fam. 13 1 Godol. Arabian	1763	Blank ?	Mare by Regulus ?
21	Rantipole Fam. 32 1 Godol. Arabian	1769	Blank ?	Joan ?
22	Red Flag Fam. 1 c 1 Ellen Horne 5 Touchstone 7 {Castrel, Selim}	1871	Lord Lyon 6 Whalebone 6 Selim 7 Orville	Rouge Rose 6 Orville 4 {Castrel, Selim}
23	Red Rag Fam. 1 c 1 Ellen Horne 5 Touchstone 7 {Castrel, Selim}	1870	Lord Lyon 6 Whalebone 6 Selim	Rouge Rose 6 Orville 4 {Castrel, Selim}
24	Ruth Fam. 13 1 Godol. Arabian	1761	Blank ?	Mare by Regulus ?
25	Rutilia Fam. 13 1 Godolphin Arabian	1769	Blank ?	Mare by Regulus ?
26	Sister to Old Country Wench Fam. 11 1 Hautboy	About 1717	Snake ?	Grey Wilkes ?
27	Mare Fam. 11 1 Pot8os 4 Herod	1822	Whisker 3 Herod 4 Snap 6 Cade	Mandane 4 Cade 6 Godol. Arabian
28	Wowski Fam. 18 1 Herod 3 Snap 5 Godol. Arabian	1777	Mentor 5 Godol. Arabian	Maria 3 Godol. Arabian

For the purpose of judging of the more removed inbreedings of approved brood mares, I have arranged 60 of the best according to the degree of their inbreeding, so as to avoid any confusion by giving too many examples. The choosing of these 60 mares is not only a difficult task, but one about which one may have very different opinions. I have only gone into the determining of their inbreedings after having selected the mares. The result was as follows :—

With 2 free generations 8 mares.
,, 3 ,, ,, 15 ,,
,, 4 ,, ,, 16 ,,
,, 5 ,, ,, 15 ,,
,, 6 ,, ,, 6 ,,

Total 60 mares.

As a great number of the best brood mares are already given in the tables of stallions, there will only be given the 36 best of the chosen 60 brood mares in the following tables of mares. According to the degree of their inbreeding they are arranged nearly the same as above, viz. :—

With 2 free generations 6 mares.
,, 3 ,, ,, 9 ,,
,, 4 ,, ,, 11 ,,
,, 5 ,, ,, 7 ,,
,, 6 ,, ,, 3 ,,

Total 36 mares.

Mares with 2 Free Generations.

No.	Names of Mares and their Families	Born	Sire	Dam
1	Annette Fam. 16 2 Orville 5 Sir Peter (by Highflyer) 5 King Fergus (by Eclipse) 6 Eclipse	1835	Priam 2 Whiskey 5 Eclipse 5 Herod	Mare by Don Juan 3 King Fergus 4 Highflyer (Grandsire of Orville)
2	Mare Fam. 3 2 Woodpecker (by Herod) 2 Mercury (by Eclipse)	1812	Canopus 2 Herod 5 Cade (by Godol. Arabian)	Mare by Y. Woodpecker 1 Woodpecker 2 Eclipse 5 Snap 5 Miss Belsea (by Regulus)

No.	Names of Mares and their Families	Born	Sire	Dam
3	Decoy Fam. 3 2 Sir Peter (by Highflyer) 5 Eclipse	1830	Filho da Puta 3 Eclipse 4 Herod 5 Snap	Finesse 2 Highflyer 4 Eclipse 5 Snap
4	Filagree Fam. 1 2 Trumpator 4 Highflyer 5 Herod 6 Matchem (by Cade)	1815	Soothsayer 5 Herod 6 Snap	Web 3 Herod 4 Snap 6 Cade
5	Prunella Fam. 1 2 Blank (Grand-son of Bartl. Childers) 4 Partner 5 Fox (Grand-son of Hautboy) 5 Flying Childers	1788	Highflyer 5 Sister to Mixbury (Dam of Partner) 6 Darley Arabian 6 Betty Leedes	Promise 4 Bay Bolton (by Grey Hautboy) 4 Sister to Mixbury (Dam of Partner) 5 Darley Arabian } 5 Betty Leedes } Parents of Fl. Childers and Bartl. Childers
6	Violet Fam. 15 2 Squirt (by Bartl. Childers) 6 Bay Bolton	1787	Shark 5 Darley Arabian 5 Betty Leedes 5 Bay Bolton	Mare by Syphon 3 Bartl. Childers (by Darley Arabian) 3 Crab

Mares with 3 Free Generations.

No.	Names of Mares and their Families	Born	Sire	Dam
1	Alice Hawthorn Fam. 4 Gep. Dep. 2×. 3 Dick Andrews 4 Beningbrough 4 Evelina (by Highflyer) 6 Eclipse	1838	Muley Moloch 2 Beningbrough 4 Highflyer 5 Eclipse	Rebecca 4 Eclipse 5 Herod 5 Highflyer
2	Arcot Lass Fam. 9 3 Volunteer (by Eclipse) 5 Herod	1821	Ardrossan 2 Eclipse 3 Herod 5 Snap	Mare by Cramlington 4 Highflyer 4 Eclipse 5 Herod
3	Arethusa Fam. 7 3 Regulus (by Godol. Arabian) 5 Partner	1792	Dungannon 4 Godol. Arabian 5 Bartl. Childers	Mare by Prophet 1 Regulus

No.	Names of Mares and their Families	Born	Sire	Dam
4	Cobweb I. O. Fam. 1 3 Y. Giantess (by Diomed) 5 Highflyer 6 Eclipse (by Marske) 6 Herod	1821	Phantom 4 Virago 4 Herod 4 Eclipse 5 Snap	Filagree 2 Trumpator 4 Highflyer 5 Herod 6 Marske
5	Mowerina Fam. 7 3 Touchstone 5 Muley (by Orville) 6 Sultan (by Selim)	1876	Scottish Chief 5 Orville 6 Selim 7 Buzzard	Stockings 5 Whisker 6 Whalebone (Grand-sire of Touchstone)
6	Penelope Fam. 1 3 Snap (by Snip) 6 Godol. Arabian 6 Partner 6 South's dam	1798	Trumpator 4 Godol. Arabian 4 Partner 5 Brown Farewell (by Makeless, Grand-sire of South's dam)	Prunella 2 Blank (by Godol. Arabian) 4 Partner 5 Flying Childers (Sire of Snip) 5 Fox
7	3 Melbourne Perditta II. Fam. 7 6 Pocahontas (by Glencoe) 6 The Baron 6 Voltaire 6 Martha Lynn	1881	Hampton 7 Whalebone	Hermione 4 Pantaloon 5 Glencoe (by Sultan) 6 Sultan
8	Queen Mary Fam. 10 3 Whalebone 5 Sir Peter (by Highflyer) 5 PotSos 5 Prunella (by Highflyer) 5 Selim	1843	Gladiator 4 Prunella 4 PotSos	Mare by Plenipotentiary 5 Sir Peter 6 Highflyer
9	Termagant Fam. 8 3 Godol. Arabian 4 Flying Childers 6 Bay Bolton (Grand-son of Hautboy)	1772	Tantrum 3 Flying Childers	Cantatrice 6 Grey Wilkes (by Hautboy) 6 Snake (Grand-son of Hautboy)

Mares with 4 Free Generations.

No.	Names of Mares and their Families	Born	Sire	Dam
1	Banter Fam. 14 4 Eclipse 6 {Old England Blank} 6 Matchem (by Cade)	1826	Master Henry 3 Highflyer 4 Eclipse 5 Herod 6 Blank (by Godol. Arabian)	Boadicea 5 Godol. Arabian 6 Bartl. Childers (Grand-sire of Old England and Blank)

No.	Names of Mares and their Families	Born	Sire	Dam
2	Cinizelli Fam. 2 4 Alexander (by Eclipse) 5 Buzzard (by Woodpecker) 5 Mare by Alexander 6 Maria (by Herod) 6 Sir Peter	1842	Touchstone 4 Alexander 5 Buzzard 5 Eclipse 5 Sir Peter 6 Highflyer	Brocade 3 Alexander 4 Sir Peter 5 Woodpecker 6 Herod
3	Electress Fam. 2 4 Eclipse 5 Herod 5 Matchem (by Cade) 6 Cade (by Godol. Arabian)	1819	Election 2 Herod 5 Cade	Mare by Stamford 4 Snap 5 Blank (by Godol. Arabian) 6 Godol. Arabian
4	Emma Fam. 7 4 Eclipse 4 Brunette 5 Herod 5 Conductor (by Matchem) 5 Highflyer (by Herod) 6 Matchem	1824	Whisker 3 Herod 4 Snap 6 Cade (by Matchem)	Gibside Fairy 5 Herod 6 Cade
5	Mandane Fam. 11 4 Cade (by Godol. Arabian) 6 Grey Robinson (by Bald Galloway)	1800	PotSos 4 Godol. Arabian 6 Bald Galloway	Y. Camilla 4 Godol. Arabian 6 Bald Galloway
6	Martha Lynn Fam. 2 4 Sir Peter (by Highflyer) 6 King Fergus (by Eclipse) 6 Woodpecker (by Herod)	1837	Mulatto 5 Highflyer 5 Florizel (by Herod) 6 Eclipse 6 Herod	Leda 5 Highflyer 5 Eclipse 5 PotSos
7	Papillon Fam. 3 4 Bay Bolton 5 Darley Arabian 5 Betty Leedes	1769	Snap 3 Bay Peg (by Leedes Arabian, Grand-sire of Betty Leedes) 5 Byerly Turk	Miss Cleveland 6 Hautboy (Grand-sire of Bay Bolton)
8	Mare Fam. 27 4 Eclipse 4 Herod 5 Curiosity (by Snap) 6 Snap	1819	Rubens 3 Herod 5 Matchem 6 Cade 6 Snap	Tippitywichet 3 Herod 5 Squirt (Grand-sire of Eclipse) 5 Snap 6 Cade
9	Thistle Fam. 4 4 Bay Middleton (by Sultan) 5 Muley (by Orville)	1875	Scottish Chief 5 Orville 6 Selim (Sire of Sultan)	The Flower Safety 6 Orville

No.	Names of Mares and their Families		Born	Sire	Dam
10	Vermeille 4 Whalebone 5 Orville	Fam. 3	1853	The Baron 4 Waxy } Parents of 4 Penelope } Whalebone	Fair Helen 5 Highflyer (Grand-sire of Orville) 6 Eclipse
11	Vista 4 Banter 4 Pantaloon	Fam. 4	1879	Macaroni 6 Sir Peter (Great Grand-sire of Pantaloon) 6 Orville (Grand-sire of Banter)	Verdure 5 Muley (by Orville)

Mares with 5 Free Generations.

No.	Names of Mares and their Families		Born	Sire	Dam
1	Araucaria 5 Orville 5 Selim	Fam. 3	1862	Ambrose 4 Orville	Pocahontas 5 Gohanna 6 Mercury 7 Highflyer (Grand-sire of Orville)
2	Barbelle 5 Eclipse 5 Highflyer 6 Herod	Fam. 3	1836	Sandbeck 4 Highflyer 5 Eclipse 5 Herod	Darioletta 3 Eclipse 4 Grecian Princess 5 Highflyer 5 Herod
3	Morganette 5 Pantaloon 6 Touchstone 6 Sultan (by Selim)	Fam. 5	1884	Springfield 5 Sultan 6 Camel (by Whaleb.) } Parents of 6 Banter } Touchst.	Lady Morgan 5 { Selim 5 { Castrel 7 Whalebone 7 Orville
4	Paradigm 5 Selim 5 Waxy 6 Orville	Fam. 1	1852	Paragone 5 Orville 6 Sir Peter (by Highflyer)	Ellen Horne 4 Selim 5 Beningbrough } Parents of 5 Evelina } Orville 6 Highflyer (Grand-sire of Orville)
5	Pocahontas 5 Gohanna (by Mercury) 6 Mercury (by Eclipse) 7 Highflyer (by Herod)	Fam. 3	1837	Glencoe 5 Mercury 6 Eclipse 6 Highflyer 6 Herod	Marpessa 2 Whiskey 4 Diomed 6 Eclipse 6 Herod
6	Sweet Katie 5 Tramp 6 Orville 6 Whisker	Fam. 5 b	1861	Stockwell 5 Orville 6 Waxy } Parents of 6 Penelope } Whisker	Kathleen 6 Gohanna (Grand-sire of Tramp) 6 Pot8os

No.	Names of Mares and their Families		Born	Sire	Dam
7	Y. Giantess 5 Godol. Arabian 5 Partner	Fam. 6	1790	Diomed 4 Crab 4 Godol. Arabian 4 Partner 5 Flying Childers	Giantess 2 Godol. Arabian 3 Partner 5 Bald Galloway

Mares with 6 Free Generations.

No.	Names of Mares and their Families		Born	Sire	Dam
1	Bee's Wing 6 Eclipse 6 Herod	Fam. 8	1833	Dr. Syntax 5 Matchem 6 Cade 6 Snip	Mare by Ardrossan 5 Eclipse 5 Herod 5 Old Tartar Mare 6 Marske 6 Angelica (by Snap)
2	Bribery 6 Sir Peter 6 Stamford (by Sir Peter) 6 Woodpecker	Fam. 2	1851	The Libel 4 Alexander 4 Buzzard 5 Sir Peter	Splitvote 5 Sir Peter
3	Crucifix 2. 1. O. 6 Highflyer 6 Eclipse 6 Herod	Fam. 2	1837	Priam 2 Whiskey 5 Eclipse 5 Herod	Octaviana 4 Highflyer 5 Herod 5 Eclipse 5 Marske

It can be seen from these examples that the same rules as regards inbreeding, and especially inbreeding supports, apply to the most approved mares just as well as to the stallions. Among the approved brood mares with more than 6 free generations I only know, unless I have made a mistake, the following nine with 7 free generations:—

1. Jamaica (dam of Foxhall) — 7 Orville.
2. Manganese (dam of The Miner) 7 Sir Peter and 7 Trumpator.
3. Mint Sauce (dam of Minting and The Lambkin) 7 Castrel and 7 Comus.
4. Miss Ann (dam of Scottish Chief) 7 Mercury and 7 Woodpecker.
5. Moorhen (dam of Gallinule) 7 Selim.
6. Silverhair (dam of Silvio) 7 PotSos and 7 Orville.
7. Mare by Tranby (dam of Vandal) 7 Highflyer.
8. Suicide (dam of Amphion) 7 Whalebone.
9. Windermere (dam of Muncaster and Kendal) 7 Orville.

This number is, in comparison with the above-mentioned twelve approved stallions with 7 free generations, a very low one. With more than 7 free

generations I only know Hymenia, dam of Virgil, and Aerolite, dam of Spendthrift. Perhaps the further removed inbreedings have been less successful with mares than with sires. The very close inbreedings, consequently, seem to be less harmful with brood mares than with sires. I do not know of one single important sire with 0 free generation. On page 236 are named the four stallions with 0 free generation of which I know. These four sires have not played any important part in Thoroughbred breeding. Amongst mares with 0 free generation, however, besides several good foundation mares, we find a few with excellent breeding performances, amongst them the following:—

1. Butterfly, dam of Nabocklish.
2. Chesnut Skim, dam of Election D.
3. Juliana, dam of Matilda L.
4. Lollypop, dam of Sweetmeat.
5. Margaretta, dam of Waverley.
6. Miss Elliot, dam of Grimcrack.
7. Valentine, dam of War Eagle Dcp. and 2nd in the Derby.
8. Manœuvre, dam of Lioness Cs.
9. Mare 1763 by Shakespeare, dam of Sweetbriar and Mentor.

As the number of brood mares used for breeding is much larger than that of stallions, the absolute figures alone, of course, cannot be taken as equal measures of comparison. Conspicuous, however, is the fact that the number of sires with 1 free generation which have done well in Thoroughbred breeding is, as above shown, only very small (really only Paulowitz, Barcaldine, and perhaps Flying Fox), whilst several prominent stallions have been born of mares with only 1 free generation, amongst which are the following:— 1 Adventurer, 2 Apology, I. O. L., 3 Blacklock, 4 Cardinal York, 5 Drome, 6 Foxhunter, 7 General Peel, 2 Dcp., 8 Goldfinder, 9 Grey Robinson, 10 Hannibal D., 11 Highflyer, 12 Kisber D. GP., 13 Knowsley, 14 Liverpool, 15 Mandrake, 16 Mark Anthony, 17 Mortemer Acp., 18 Padischah S.O., 19 Phaeton, 20 Przedwit OD., 21 Pyrrhus I. D., 22 Ruler L., 23 Schwindler U. ND., 24 Smolenski 2. D., 25 Squirt, 26 Statesman, 27 Theodore L., 28 Thunderbolt, 29 Wenlock L., 30 Weatherbit, 31 Fl. Childers, 32 Bart. Childers.

In order to judge the inbreeding question with Half-breds, I have mentioned in the following list 61 Half-bred stallions which were born in Trakehnen, with their own and their parents' inbreeding. I have only left out a few stallions, as they had practically no remarkable influence in the Trakehnen breedings. Unfortunately, I have also had to leave out the following 9 stallions because their basis of inbreeding could not be determined, partly on account of their insufficient pedigree: Edeling, Elfenbein, Grezano, Fritter, Hirtenknabe, Lauer, Leporello, Paschal, and Thunderclap. The remaining 61 Half-bred stallions are divided as follows:—

With 1	free generation	2 stallions.
,, 2	,,	,,	6	,,
,, 3	,,	,,	6	,,
,, 4	,,	,,	15	,,
,, 5	,,	,,	11	,,
,, 6	,,	,,	11	,,
,, 7	,,	,,	7	,,
,, 8	,,	,,	3	,,
		Total	61	stallions.

Unfortunately, in the Trakehnen Stud Book we find many failures with still closer inbreeding than 1 free generation. A weakly constitution, light bones, tenderness, and finally sterility, have been also in the breeding of Trakehnen Half-breds the consequences of too close inbreedings. Also in the Thoroughbred breeding we find the most robust and the strongest individuals among those with more removed inbreedings. Among the close inbreedings we find many light boned and small horses. With the natural breeds, as, for example, the breeds of the Steppes, endowed with a more robust constitution, a close inbreeding with 1 or still less free generations may be carried on longer without bad consequences than with the modern improved breeds. Even within the modern improved breeds themselves, the more hardened amongst them, as for example, the Thoroughbred, seem, as above shown, to stand a closer inbreeding better than most Half-breds, especially the pampered ones.

Although the dangers of carrying inbreeding too far have been known for a long time, yet we find breeders (also in Half-bred breeding) who ignore the experiences of their predecessors, till they themselves, but generally too late, find out from their own breeding that their great, imagined cleverness has cost them very dear owing to the mistakes they have made. The evil experiences which Trakehnen suffered in the first half of the last century on account of exaggerated inbreeding should be a lesson to all who care to learn from the experience of others and who do not wish only to appear themselves clever. In the first volume of the Trakehnen Stud Book we find many examples showing distinctly the deterioration and final destruction of prominent breeding material caused by exaggerated inbreeding. Thunderclap, born 1840 by Mikle Fell and Toise, was perhaps the best Half-bred stallion ever bred in Trakehnen. He was used for 21 years as Royal Stud stallion, but by an exaggerated inbreeding much less has remained of him than one might have expected after 21 years' use. Thunderclap should perhaps have been the first sire of Half-breds of whom one might have been able to say that every Half-bred in East Prussia has his blood in him, even if not quite to the same extent as it has that of Eclipse. The list below gives a summary of the results of exaggerated inbreeding in Trakehnen.

In the first volume of the Trakehnen Stud Book, unless I have made a mistake in counting, there are 54 cases mentioned in which the stallion has covered his daughter, *i.e.*, the breeding has been tried with —1 free generation. In the following list only the stallions are given who have covered their daughters.

Names of Stallions	Daughters covered	In foal	Of which were Stallions	Brood Mares
Thunderclap	24 times.	13	1†	2
Oronocco I.	14 ,,	11	—	—
Caril	6 ,,	6	2	—
Scrapall xx	4 ,,	4	1	—
Snyders xx	1 ,,	1	1	—
Meteor x	1 ,,	1	–	1
Culblane I.	1 ,,	1	—	—
Ormond	1 ,,	1	—	—
Oromedon	2 ,,	2	—	—
	Total 54 times ††	40	5	3

† By Thunderclap or Daunius.
†† Including 5 cases in which other Stallions had also covered the Mare.

The five stallions which were produced from this breeding belonged to a very inferior class. The best was Fra Diavolo, and he had two sires and was very likely a progeny of Daunius. The three brood mares were :—

1. Humanita 1863 by Thunderclap, Family 68, who has not produced anything special and is in danger of dying out.

2. Theresa 1815 by Meteor, was sent to Gradiz and died there without producing anything.

3. Favora 1849 by Thunderclap, also sent to Gradiz, died without producing anything.

An inbreeding in which sire and dam are by the same father, *i.e.*, a breeding with 0 free generation, is mentioned in the first volume of the Trakehnen Stud Book 367 times (84 times with Thunderclap). From this covering the mares became pregnant 264 times, and produced 44 country stallions and 40 brood mares. Of these 44 country stallions only one may be classified as of a better class, and he was mixed Thoroughbred, viz., Triumphator x 1811 by Allahor x. Of the 40 brood mares 29 have died out, some without progeny, and some without special performances. Only two of the extinct lines could show better performances by producing the two Royal Stud stallions Igor and Dorimont. The following four families also threaten to die out, viz.: Lubinka, Fionda, Orselska, and Somma. Only three families seem to be able to remain of any use in Trakehnen, viz.: Teresina (Fam. 220), Costarika (Fam. 65), and Flaute (Fam. 137). Two

mares came to Gradiz: Mary 1815 by Oronocco II., and Prima 1850 by Oromedon, and died there without progeny. Two mares came to Neustadt: Aurata 1854 by Ibarra, and Campelli 1857 by Ibarra. The first died there without progeny, and the latter died finally in Beberbeck, with her grand-daughter Clara, without any special performances.

Stallions with 1 Free Generation.

No.	Names of Stallions	Born	Sire	Dam
1	Hipparch 1 Blackamoor xx 1 Cyane (by Oronocco I.)	1842	Transparent ?	Mercedone 3 Oronocco I.
2	Leo 1 Reprobate	1867	Duplicat 3 Waterman xx 5 Rodrich	Lewa ?

Stallions with 2 Free Generations.

No.	Names of Stallions	Born	Sire	Dam
1	Ackermann 2 Ambos	1899	Hirtenknabe ?	Accurate 5 Eurydamus (Great Grand-sire of Ambos)
2	Dorimont 2 Blackamoor xx 4 Oronocco I.	1848	Eurydamus 2 Oronocco I.	Dairymaid 4 Sorcerer xx (Grand-sire of Blackamoor xx) 4 Oronocco I.
3	Eurydamus 2 Oronocco I.	1833	Praetor ?	Gabrielle ?
4	Heniochus 2 Sorcerer xx (by Trumpator xx)	1834	J. Whalebone xx 2 Trumpator xx	Pupille ?
5	Journey 2 Leporello 4 Blackamoor xx 4 Pretender	1862	Promoter 4 Oronocco I. (Grand-sire of Leporello)	Jessonda 4 Oronocco I. 5 Sorcerer xx (Grand-sire of Blackamoor xx)
6	Molorchus 2 Sorcerer xx	1836	The Cryer xx 5 Matchem xx (Great Grand-sire of Sorcerer xx) 5 Herod	Egisthe 3 Sorcerer xx

Stallions with 3 Free Generations.

No.	Names of Stallions	Born	Sire	Dam
1	Apis 3 Stockwell xx 6 The Cryer xx	1884	Paladin 6 Touchstone xx	Apanage 7 {Whalebone xx Whisker xx
2	Djalma 3 Trafalgar (75% xx) 5 Ormond	1853	Oromedon 4 M. Farthings Turc xx? (Grand-sire of Trafalgar) 5 Sir Peter xx (probably Grand-sire of Trafalgar)	Deducta 8 Eclipse xx
3	Duplicat 3 Waterman xx 5 Rodrich	1859	Djalma 3 Trafalgar 5 Ormond	Daja 7 Eclipse xx
4	Eckstein 3 Eurydamus 6 Blackamoor xx (Grand-sire of Eurydamus)	1870	Venerato 5 Oronocco I. Grand-sire: 2 Blackamoor xx	Echo 2 Eurydamus 5 Blackamoor xx 5 Y. Whalebone xx
5	Elwin 3 Vorwärts	1887	Passvan 5 Snyders xx	Emilia ?
6	Hydriot 3 Fritter 5 Eurydamus	1895	Fürstenberg 6 Ganges x	Hydra 3 Eurydamus (Grand-sire of Fritter) 5 Y. Whalebone xx

Stallions with 4 Free Generations.

No.	Names of Stallions	Born	Sire	Dam
1	Aal 4 Pocahontas xx 5 Stilton xx	1882	Tunnel 6 Camel xx	Allbekannte 7 Whisker xx 8 Tramp xx
2	Antenor 4 Sorcerer xx 4 Oronocco I.	1846	Leporello ?	Angitia ?
3	Calcas 4 Trumpator xx 5 Alexander xx (by Eclipse xx)	1829	Scrapall xx 5 Eclipse xx	Moira ?
4	Epaminondas 4 Y. Whalebone xx 4 Tigranes x	1872	Inspector x 6 Sorcerer xx (Grand-sire of Tigranes x, Y. Whalebone xx, and Blackamoor xx) Grand-sire: 4 Sorcerer xx	Epocca 3 Blackamoor xx 6 Sorcerer xx

No.	Names of Stallions	Born	Sire	Dam
5	Flügel 4 Vega 6 Catton xx 7 Orville xx 7 Thunderbolt xx (by Sorcerer xx) 8 Sorcerer xx	1869	Vorwärts 6 Orville xx 6 Sorcerer xx	Flasche ? Grand-dam: 5 Sorcerer xx
6	Hanno 4 Emma xx (by Whisker xx)	1861	Danseur xx 4 {Whisker xx Whalebone xx}	Harriet ?
7	Ibarra 4 Caril 7 Trumpator xx	1848	Thunderclap ?	Jupine ?
8	Jemim 4 Ganges x 5 Leporello (by Tigranes x)	1876	Pless 7 Thunderbolt xx 7 Whalebone xx	Jessica 5 Tigranes x
9	Jenissei 4 Vecordia	1888	Venezuela 6 Emilius xx	Jemba 3 Antenor 4 Ganges x
10	Massa 4 Vega 7 Thunderbolt xx (by Sorcerer xx)	1873	Vorwärts 6 Sorcerer xx 6 Orville xx	Materna 9 Sorcerer xx Grand-sire: 6 Sorcerer xx
11	Merlin 4 Whalebone xx 6 Sorcerer xx (by Trumpator xx)	1860	Sahama xx 5 Buzzard xx 5 Evelina xx 6 Trumpator xx (Grand-sire of Whalebone xx)	Morea 1 Y. Whalebone xx Grand-sire: 2 Sorcerer xx
12	Morgenstrahl 4 Pocahontas xx 4 Teddington xx 5 Orlando xx 7 Camel xx (by Whalebone xx)	1896	Blue Blood xx 7 Selim xx (Great Grand-sire of Pocahontas xx) 6 {Whalebone xx Whisker xx}	Moba 6 Camel xx (Grand-sire of Orlando xx and Great Grand-sire of Teddington xx) Grand-dam: 5 Camel xx
13	Oromedon 4 Mr. Farthings Turc xx? 5 Sir Peter xx ?	1836	J. Driver 6 Herod xx	Trulla ?

No.	Names of Stallions	Born	Sire	Dam
14	Pompejus 4 Vesta xx 7 Whalebone xx	1871	Inspector x 6 Sorcerer xx	Pomette 4 Emma xx (by Whisker xx)
15	Promoter 4 Oronocco I. 6 Sorcerer xx	1852	Eurydamus 2 Oronocco I.	Promise ?

Stallions with 5 Free Generations.

No.	Names of Stallions	Born	Sire	Dam
1	Eberhard 5 Snyders xx 5 Vega 5 Gyare	1877	Flügel 4 Vega 6 Catton xx	Elba ?
2	Empörer 5 Pocahontas xx	1899	Lehnsherr 6 Touchstone xx	Emigrantin 5 Sahama xx
3	Fischerknabe 5 Pocahontas xx	1901	Obelisk 7 Humphrey Clinker xx	Fischerin 5 Pocahontas xx
4	Granicus 5 Melbourne xx	1887	Kingdom xx 5 Sultan xx 5 Camel xx	Gradlitz 7 Whalebone xx 7 Bagdadly ox
5	Juli 5 Gladiator xx	1880	Fripounier xx 1 Orlando xx	Jacke ?
6	Malteser 5 Emma xx (by Whisker xx) 7 Whalebone xx	1872	Lelio xx 3 Camel xx (by Whalebone xx) 3 Banter xx 6 Waxy xx } Parents of Whisker xx 6 Penelp. xx } and Whalebone xx	Malagamba 4 Y. Whalebone xx 6 Tigranes x
7	Matador 5 Waxy xx 5 Penelope xx (own brother to Marocco & Mutus)	1845	Thunderclap ?	Muta ?
8	Nisos 5 Y. Whalebone xx (by Whalebone xx)	1874	Venerato 5 Oronocco I.	Nixe 6 Camel xx (by Whalebone xx) Grand-sire : 3 Whalebone xx
9	Passvan 5 Snyders xx 6 Emma xx 6 { Mündig xx Mickle Fell xx	1881	Flügel 4 Vega 6 Catton xx (Sire of Mündig xx and Mickle Fell xx)	Palme 6 Emma xx (Dam of Mündig xx and Mickle Fell xx)

No.	Names of Stallions	Born	Sire	Dam
10	Poët 5 Vorwärts 6 Pocahontas xx 6 Stockwell xx 8 Orlando xx	1904	Morgenstrahl 4 Pocahontas xx 4 Teddington xx 5 Orlando xx 7 Camel xx	Polynesia 8 Touchstone xx Grand-dam : 3 Stockwell xx Grand-sire : 6 Camel xx
11	Venerato 5 Oronocco I. 7 Sorcerer xx (Grand-sire of Blackamoor xx)	1852	Dorimont 2 Blackamoor xx 4 Oronocco I. Grand-dam : 4 Sorcerer xx	Vecordia ?

Stallions with 6 Free Generations.

No.	Names of Stallions	Born	Sire	Dam
1	Discant 6 Camel xx	1877	Flügel 4 Vega	Diana ?
2	Fürstenberg 6 Ganges x 7 Whalebone xx	1878	Ambos 3 Eurydamus 4 Y. Whalebone xx	Fulda x 5 Sir Hercules xx (by Whalebone xx)
3	Orcus 6 Camel xx (by Whalebone xx)	1883	Friponnier xx 1 Orlando xx (Grand-son of Camel) 7 Whalebone	Orelia 8 {Whalebone xx {Whisker xx Grand-sire : 4 Whalebone xx
4	Paladin 6 Touchstone xx	1874	Adonis xx 5 Sultan xx	Palme 6 Sorcerer xx
5	Pardo 6 Orville xx 5 {Rubens xx {Selim xx	1863	Vindex xx 3 Selim xx 5 Orville xx 4 Waxy xx 4 Penelope xx	Perilla 5 Sorcerer xx
6	Polarsturm 6 Pocahontas xx	1900	Optimus 7 Humphrey Clinker xx	Povona 8 Touchstone xx Grand-sire : 3 Pocahontas xx
7	Principal 6 Whalebone xx	1868	Vorwärts 6 Sorcerer xx 6 Orville xx	Principessa 3 Y. Whalebone xx 4 Tigranes x
8	Prinz Optimus 6 Pocahontas xx 6 Melbourne xx (by Humphrey Clinker xx)	1898	Optimus 7 Humphrey Clinker xx	Prinzess 3 Sahama xx 4 Stilton xx

No.	Names of Stallions	Born	Sire	Dam
9	Tunnel 6 Camel xx (by Whalebone xx) 7 Whalebone xx	1874	The Duke of Edinbourgh xx 6 Whalebone xx	Tutti 6 Camel xx Grand-sire: 3 Whalebone xx
10	Venezuela 6 Emilius xx	1878	Hector xx 6 Blacklock xx	Viereck 6 Y. Whalebone xx
11	Vorwärts 6 Sorcerer xx (by Trumpator xx) 6 Orville xx	1859	Sahama xx 5 Evelina xx (Dam of Orville xx) 5 Buzzard xx 6 Trumpator xx 6 Sir Peter xx Grand-dam: 4 Sorcerer xx	Vecordia ? Grand-sire: 2 Orville

Stallions with 7 Free Generations.

No.	Names of Stallions	Born	Sire	Dam
1	Alter Herr 7 Pocahontas xx 7 Melbourne xx (by Humphrey Clinker xx)	1902	Optimus 7 Humphrey Clinker xx	Almuda 7 Birdcatcher xx 7 Eurydamus 7 Sahama xx
2	Amtsvorsteher 7 Touchstone xx	1899	Fanfarro 8 Whisker xx	Anisette 4 Pocahontas xx
3	Duduck 7 Waxy xx (Sire of Woful xx)	1863	Lightning xx 4 Sorcerer xx (by Trumpator xx) Grand-dam: 3 Waxy xx } Parents of Woful xx 3 Penel. xx (by Trump.)	Daisy 3 Waterman xx (by Woful xx)
4	Elton 7 Camel xx	1888	The Duke of Edinbourgh xx 6 Whalebone xx 7 Selim xx 7 Buzzard xx 7 Mare by Alexander xx	Elpis 6 Camel xx
5	Justizminister 7 Touchstone xx	1898	Boulevard xx 4 Birdcatcher xx	Justitia 7 Touchstone xx
6	Panzer 7 Pocahontas xx (Dam of Stockwell xx)	1902	Greif xx 5 Stockwell xx	Panzerkette 4 Vecordia 4 Fritter

No.	Names of Stallions	Born	Sire	Dam
7	Pless 7 Thunderbolt xx (by Sorcerer xx) 7 Whalebone xx	1870	Vorwärts 6 Sorcerer xx 6 Orville xx	Petze 4 Tigranes x

Stallions with 8 Free Generations.

No.	Names of Stallions	Born	Sire	Dam
1	Flock 8 Orville xx	1875	Ructic xx 6 Orville xx	Flamme 4 Vega 6 Catton xx 7 Orville xx 7 Thunderbolt xx
2	Popilius 8 Waxy xx 8 Penelope xx	1873	Lahire xx 3 Whalebone xx Grand-dam : 1 Whalebone xx	Pocke 3 Deluge (by Waterman xx, Grand-son of Waxy xx)
3	Thebaner 8 Whalebone xx	1876	Pless 7 Whalebone xx	Theresia 7 Whisker xx Grand-sire : 4 Whalebone xx

From these 61 examples one may draw the following conclusions:—

1. That the greatest number of Royal Stud stallions (just as is the case in Thoroughbred breeding) are amongst those with 4 free generations. Yet the most favourable limit for Half-bred breeding seems to me to be wider than with Thoroughbreds, as not 3, 4 and 5, but 4, 5 and 6 free generations show the best results. Besides, the merits of Half-bred stallions with 5, and especially with 6, free generations are much superior to those of the other stallions. Amongst the many stallions with 4 free generations there are only three good ones, namely, Flugel, Morgenstrahl, and Oromedon. Of these three Morgenstrahl ($94\frac{1}{4}$%) is very near to Thoroughbred, and very likely the other two would be also very near to Thoroughbred if one could only determine their pedigree more accurately. The two stallions with 1 free generation were very inferior. Amongst those with 2 free generations only Dorimont and Journey may be classified as important, but both became Royal Stud stallions only on account of their black colour. The final conclusion to be drawn is that the most favourable inbreeding for Half-breds is 1 to 2 free generations more removed than is the case with Thoroughbreds, and that perhaps only very noble Half-breds prefer a closer inbreeding up to 4 or 3 free generations, just like Thoroughbreds.

2. The inbreeding supports seem to be just as useful in Half-bred breeding as in Thoroughbred breeding. In many cases, unfortunately, the

pedigree is so incomplete that many inbreedings cannot be ascertained. Precisely the very best stallions, as for example, Fürstenberg, Malteser, Morgenstrahl, Orcus, Passvan, Tunnel, Venerato, Vorwarts, etc., show the same inbreeding supports either on the part of their dam or of their sire, or of both, as is shown in the case of the best Thoroughbred stallions. Several of the most important mixed Thoroughbred stallions which are not mentioned here show these inbreeding supports very clearly, as for example, the best of them, Inspector x with 6 Sorcerer xx and the sire: 4 Sorcerer xx, further, Ganges x with 4 Sorcerer xx and sire: 4 Sorcerer xx and Nobleman x with 2 Tigranes x, 6 Waxy xx and 6 Penelope xx (by Trumpator), sire: 4 Sorcerer xx (by Trumpator and grand-sire of Tigranes) dam: 6 Trumpator xx. Finally, to give an example from the racecourse, the at present best Half-bred steepler, Ready, born Hanover 1899 by Lorbeer (Beberbecker) and Rosamunde, with 7 Melbourne xx, sire: 4 West Australian xx (by Melbourne), dam: 3 Y. Melbourne xx.

As an example for an unsatisfactory heredity of an otherwise first-class Half-bred stallion, on account of insufficient inbreeding supports, I may here mention Apis (page 303, No. 1), just as I mentioned Iroquois for Thoroughbred breeding.

Half-bred stallions, excellent in their conformation but with insufficient inbreeding support, as for example, Optimus (7 Humphrey Clinker [by Comus], sire 8 Comus, dam 7 Whalebone and 10 Sorcerer [sire of Comus]), are often very difficult to mate to get the best results. Melbourne (by Humphrey Clinker) and Pocahontas are the two cardinal points in Optimus' pedigree. Probably, therefore, one would obtain the best results with mares inbred to Melbourne or Pocahontas' blood.

3. When mating the parents, of course, it is to be understood that only prominent ancestors common to both should be chosen as basis of inbreeding, as we have already pointed out when dealing with Thoroughbred breeding. As in the pedigree of Half-breds, Thoroughbreds are generally the best ancestors, it is recommendable in Half-bred breeding to direct the inbreeding, as far as possible, to a Thoroughbred ancestor. Half-bred is, however, in this respect often very difficult to handle. Yet the statistics of above 61 Half-bred stallions show that in 49 cases Thoroughbred (inclusive of mixed and questionable Thoroughbred) has served as a basis of inbreeding, and Half-bred in 12 cases only. All the 11 stallions with 6 free generations have Thoroughbred as basis of their inbreeding. Of all better stallions, only two are inbred to Half-bred as a basis, and these two were the black stallions Journey and Venerato, which on account of their colour could claim a more indulgent criticism.

In breeding Half-breds in which a certain type, say a fine figure, is more important than capabilities, as for example, with coach horses (Oldenburg, Holstein, and part of Hanover), an inbreeding to typical Half-bred ancestors will often be advisable. When breeding purely for conformation it is very

essential to know the great influence which the exterior of the basis of inbreeding often exercises. High legs in the heredity of a stallion (for example Geheimrat) are, according to experiments which I have here made, more surely removed by a close inbreeding to a short-legged ancestor than by mating with a short-legged mare (for example Moba), without thereby attaining the close inbreeding to a basis characterised by short legs.

In all breedings for military and riding horses, capabilities are the most important thing, and breeding must, of course, be directed to that end. Besides, in riding and military horse breeds, the type to be obtained is in no way opposed to that of the Thoroughbred, but so nearly related to it that by the increased and well-chosen addition of Thoroughbred blood the Half-bred type can only be improved. Neither Thoroughbred breeders nor Half-bred breeders ought to be frightened away from their main purpose, *i.e.*, capabilities, by fear of a change of type. Capabilities will automatically form the most suitable type in Thoroughbred as well as in Half-bred, if only the breeder will mate and rear his animals chiefly with respect to capabilities. The strength of the Half-bred, which is so desirable, and rightly so very much esteemed, would be diminished by the early training usual with Thoroughbreds. An extended grazing, lasting up to the third year, increases that strength, which gives type and value to the Half-breds.

From the list given below of classical male and female winners, it follows that the inbreeding has been a useful factor in the production of good stock in use, *i.e.*, in this case of successful racehorses. It is surprising that 4 free generations seem to be the most favourable limit of inbreeding with the best racehorses just as well as with the best breeding horses. The idea of producing breeding material with special individual prepotency by a very close inbreeding, as for example, in the case of Flying Fox (1 Galopin), or by a close and repeated inbreeding with distinct inbreeding support, as for example, in the case of Blacklock (3 Highflyer, 4 Herod, Sire: 3 Herod, dam: 2 Herod), is based on a lack of reflection. Should a stallion even be inbred as much and as often to Herod as a basis, he can never become ultimately more Herod than Herod himself was, and therefore cannot transmit more Herod peculiarities than Herod himself did. The individual prepotency has nothing to do with close inbreeding. The most stallions who have shown a special individual prepotency had a proportionately far removed inbreeding, as for instance, Birdcatcher, Buccaneer, Chamant, Flibustier, Newminster, Perth, Rataplan, Stockwell, Voltigeur, and many others with 5 free generations each, and Bend Or, Doncaster, Lord Clifden, St. Simon, Thormanby, West Australian, and many others with 6 free generations each. In Half-bred breeding, Optimus can be mentioned as a stallion endowed with unusual individual prepotency, and he also had a very far removed inbreeding, *i.e.*, 7 Humphrey Clinker.

The male and female winners of the Derby, St. Leger, and Oaks, arranged according to the number of free generations :—

0 Free Generation.

COLTS

1. Cedric D. 1821 by Phantom.

FILLIES

1 Free Generation.

1. Ninety-Three L. 1790 by Florizel.
2. Ashton L. 1806 by Walnut.
3. Cadland D. 1825 by Andrew.
4. Knight of St. George L. 1851 by Birdcatcher.
5. Flying Fox D.L. 1896 by Orme.

1. Trifle O. 1782 by Justice.
2. Bellissima O. 1795 by Phoenomenon.
3. Ephemera O. 1797 by Woodpecker.
4. **Miss Letty** O. 1834 by Priam.

2 Free Generations.

1. Saltram D. 1780 by Eclipse
2. Noble D. 1783 by Highflyer
3. Colt D. 1794 by Fidget
4. Cockfighter L. 1796 by Overton
5. Quiz L. 1798 by Buzzard
6. **Orville** L. 1799 by Beningbrough
7. Cardinal Beaufort D. 1802 by Gohanna
8. Election D. 1804 by Gohanna
9. Petronius L. 1805 by Sir Peter
10. Pan D. 1805 by St. George
11. Pope D. 1806 by Waxy
12. William L. 1811 by Governor
13. Ebor L. 1814 by Orville
14. Sailor D. 1817 by Scud
15. Theodore L. 1819 by Woful
16. Memnon L. 1822 by Whisker
17. Mameluke D. 1824 by Partisan
18. **Priam** D. 1827 by Emilius
19. Blue Gown D. 1865 by Beadsman
20. Hawthornden L. 1867 by Lord Clifden
21. **Galopin** D. 1872 by Vedette
22. **Petrarch** L. 1873 by Lord Clifden
23. **Sainfoin** D. 1887 by Springfield
24. Sir Hugo D. 1889 by Wisdom

1. Stella O. 1781 by Plunder
2. Annette O. 1784 by Eclipse
3. Hippolyta O. 1787 by Mercury
4. Portia O. 1788 by Volunteer
5. Hermione O. 1791 by Sir Peter
6. Platina O. 1792 by Mercury
7. Parisot O. 1793 by Sir Peter
8. *Scotia* O. 1799 by Delpini
9. Pelisse O. 1801 by Whiskey
10. **Mannella** O. 1809 by Dick Andrews
11. **Altisidora** L. 1810 by Dick Andrews
12. Music O. 1810 by Waxy
13. Minuet O. 1812 by Waxy
14. The Duchess L. 1813 by Cardinal York
15. Neva O. 1814 by Cervantes
16. Shoveller O. 1816 by Scud
17. Galata O. 1829 by Sultan
18. **Feu de Joi** O. 1859 by Longbow
19. **Tormentor** O. 1863 by King Tom
20. *Gamos* O. 1867 by Saunterer
21. *Thebais* O. 1878 by Hermit
22. *Seabreeze* O.L. 1885 by Isonomy

3 Free Generations.

1. Bourbon L. 1774 by Le Sang
2. Tommy L. 1776 by Wildair
3. Ruler L. 1777 by Young Marske
4. **Sir Peter** D. 1784 by Highflyer
5. **Beningbrough** L. 1791 by King Fergus
6. Spread Eagle D. 1792 by Volunteer
7. Sir Harry D. 1795 by Sir Peter
8. Symmetry L. 1795 by Delpini
9. Archduke D. 1796 by Sir Peter
10. Ditto D. 1800 by Sir Peter
11. Staveley L. 1802 by Shuttle
12. Paris D. 1803 by Sir Peter
13. **Whalebone** D. 1807 by Waxy
14. Octavian L. 1807 by Stripling
15. Blücher D. 1811 by Waxy
16. **Whisker** D. 1812 by Waxy
17. Filho da Puta L. 1812 by Haphazard
18. Azor D. 1814 by Selim
19. Sam D. 1815 by Scud
20. Reveller L. 1815 by Comus
21. Tiresias D. 1816 by Soothsayer
22. Antonio L. 1816 by Octavian
23. St. Patrick L. 1817 by Walton
24. Jack Spigot L. 1818 by (Ardrossan) or Marmion
25. **Emilius** D. 1820 by Orville
26. Tarrare L. 1823 by Catton
27. The Colonel L. 1825 by Whisker
28. Frederick D. 1826 by Little John
29. Rockingham L. 1830 by Humphrey Clinker
30. Elis L. 1833 by Langar
31. Phosphorus D. 1834 by Lamplighter
32. Don John L. 1835 by (Tramp) or Waverley
33. Satirist L. 1838 by Pantaloon
34. Cotherstone D. 1840 by Touchstone

1. Hollandaise L. 1775 by Matchem
2. Tetotum O. 1777 by Matchem
3. Imperatrix L. 1779 by Alfred
4. **Maid of the Oaks** O. 1780 by Herod
5. Cowslip L. 1782 by Highflyer
6. **Pewett** L. 1786 by Tandem
7. Tag O. 1786 by Trentham
8. Volante O. 1789 by Highflyer
9. *Cälia* O. 1790 by Volunteer
10. **Eleanor** D.O. 1798 by Whiskey
11. Theophania O. 1800 by Delpini
12. **Bronze** O. 1803 by Buzzard
13. **Briseis** O. 1804 by Beningbrough
14. **Morel** O. 1805 by Sorcerer
15. Oriana O. 1807 by Beningbrough
16. **Landscape** O. 1813 by Rubens
17. Corinne O. 1815 by Waxy
18. **Pastille** O. 1819 by Rubens
19. *Zinc* O. 1820 by Woful
20. **Cobweb** O. 1821 by Phantom
21. **Turquoise** O. 1825 by Selim
22. **Cyprian** O. 1833 by Partisan
23. **Refraction** O. 1842 by Glaucus
24. **Cymba** O. 1845 by Melbourne
25. *Butterfly* O. 1857 by Turnus
26. *Hippia* O. 1864 by King Tom
27. **Marie Stuart** O.L. 1870 by Scottish Chief
28. Camelia ½ O. 1873 by Macaroni
29. **Jannette** O.L. 1875 by Lord Clifden
30. **Wheel of Fortune** O. 1876 by Adventurer
31. *Shotover* D. 1879 by Hermit
32. **Mimi** O. 1888 by Barcaldine
33. Our Lassie O. 1900 by Ayrshire
34. Cherry Lass O. 1902 by Isinglass
35. Glass Doll O. 1904 by Isinglass

35. Nutwith L. 1840 by Tomboy
36. **Orlando** D. 1841 by Touchstone
37. The Merry Monarch D. 1842 by Slane
38. Sir Tatton Sykes L. 1843 by Melbourne
39. **The Flying Dutchman** D.L. 1846 by Bay Middleton
40. **Beadsman** D. 1855 by Weatherbit
41. Pretender D. 1866 by Adventurer
42. Pero Gomez L. 1866 by Beadsman
43. **Silvio** D.L. 1874 by Blair Athol
44. St. Blaise D. 1880 by Hermit
45. { Harvester ½ D. 1881 by Sterling; **St. Gatien** ½ D. 1881 by Rotherhill or The Rover }
46. The Lambkin L. 1881 by Camballo
47. **Melton** D.L. 1882 by Master Kildare
48. Merry Hampton D. 1881 by Hampton
49. **Galtee More** D.L. 1894 by Kendal
50. Your Majesty L. 1905 by Persimmon

4 Free Generations.

1. **Diomed** D. 1777 by Florizel
2. Y. Eclipse D. 1778 by Eclipse
3. Assassin D. 1779 by Sweetbriar
4. **Phoenomenon** L. 1780 by Herod
5. Serjeant D. 1781 by Eclipse
6. Aimwell D. 1782 by Mark Antony
7. Paragon L. 1783 by Paymaster
8. Spadille L. 1784 by Highflyer
9. Sir Thomas D. 1785 by Pontac
10. Skyscraper D. 1786 by Highflyer
11. Eager D. 1788 by Florizel
12. Tartar L. 1789 by Florizel
13. **Hambletonian** L. 1792 by King Fergus
14. Ambrosio L. 1793 by Sir Peter
15. Lounger L. 1794 by Drone
16. Champion D.L. 1797 by Pot8os

1. Bridget O. 1776 by Herod
2. **Faith** O. 1778 by Herod
3. Serina L. 1778 by Goldfinder
4. Ceres O. 1779 by Sweet William
5. Omphale L. 1781 by Highflyer
6. Nightshade O. 1785 by Pot8os
7. Y. *Flora* L. 1785 by Highflyer
8. **Nike** O. 1794 by Alexander
9. Bellina O. 1796 by Rockingham
10. **Meteora** O. 1802 by Meteor
11. **Paulina** L. 1804 by Sir Peter
12. Maid of Orleans O. 1806 by Sorcerer
13. **Sorcery** O. 1808 by Sorcerer
14. **Medora** O. 1811 by Selim
15. **Caroline** O. 1817 by Whalebone
16. **Augusta** O. 1818 by Woful

17. Tyrant D. 1799 by Pot8os
18. Remembrancer L. 1800 by Pipator
19. Sancho L. 1801 by Don Quixote
20. **Phantom** D. 1808 by Walton
21. Octavius D. 1809 by Orville
22. Otterington L. 1809 by Golumpus
23. **Smolensko** D. 1810 by Sorcerer
24. Gustavus D. 1818 by Election
25. Moses D. 1819 by Whalebone or Seymour
26. Barefoot L. 1820 by Tramp
27. Middleton D. 1822 by Phantom
28. Birmingham L. 1827 by Filho da Puta
29. Chorister L. 1828 by Lottery
30. Margrave L. 1829 by Muley
31. **Plenipotentiary** D. 1831 by Emilius
32. **Touchstone** L. 1831 by Camel
33. Mündig D. 1832 by Catton
34. **Bay Middleton** D. 1833 by Sultan
35. Amato D. 1835 by Velocipede
36. Little Wonder D. 1837 by Muley
37. Launcelot L. 1837 by Camel
38. Coronation D. 1838 by Sir Hercules
39. **The Baron** L. 1842 by Birdcatcher
40. Surplice D.L. 1845 by Touchstone
41. Wild Dayrell D. 1852 by Ion
42. **Hermit** D. 1864 by Newminster
43. Sefton D. 1875 by Speculum
44. Sir Bevis D. 1876 by Favonius
45. **Rayon d'Or** L. 1876 by Flageolet
46. Rock Sand D.L. 1900 by Sainfoin
47. St. Amand D. 1901 by St. Frusquin
48. Challacombe L. 1902 by St. Serf
49. Spearmint D. 1903 by Carbine
50. Orby D. 1904 by Orme

17. **Lilias** O. 1823 by Interpreter
18. **Oxygen** O. 1828 by Emilius
19. **Ghuznee** O. 1838 by Pantaloon
20. **Blue Bonnet** L. 1839 by Touchstone
21. *Poison* O. 1840 by Plenipotentiary
22. **The Princess** O. 1841 by Slane
23. **Miami** O. 1844 by Venison
24. Iris O. 1848 by Ithuriel
25. **Catherine Hayes** O. 1850 by Lanercost
26. **Summerside** O. 1856 by West Australian
27. **Reine** O. 1869 by Monarque
28. **Spinaway** O. 1872 by Macaroni
29. Placida O. 1874 by Lord Lyon
30. *Bonny Jean* O. 1880 by Macaroni
31. Rêve d'Or O. 1884 by Hampton
32. **L'Abbesse de Jouarre** O. 1886 by Trappist
33. **Throstle** L. 1891 by Petrarch
34. Limasol O. 1894 by Poulet
35. **Airs and Graces** O. 1895 by Ayrshire
36. Keystone II. O. 1903 by Persimmon

5 Free Generations.

1. Radamanthus D. 1787 by Justice
2. Ambidexter L. 1787 by Phoenomenon
3. Y. Traveller L. 1788 by King Fergus
4. **Waxy** D. 1790 by Pot8os
5. Dädalos D. 1791 by Justice
6. Didelot D. 1793 by Trumpator
7. Soothsayer L. 1808 by Sorcerer
8. Prince Leopold D. 1813 by Hedley
9. **Jerry** L. 1821 by Smolensko
10. Lapdog D. 1823 by Whalebone
11. Rowton L. 1826 by Oiseau
12. Spaniel D. 1828 by Whalebone
13. St. Giles D. 1829 by Tramp
14. Dangerous D. 1830 by Tramp
15. Mango L. 1834 by Emilius
16. Charles XII. L. 1836 by Voltaire
17. Attila D. 1839 by Colwick
18. **Faugh-a-Ballagh** L. 1841 by Sir Hercules
19. **Pyrrhus I.** D. 1843 by Epirus
20. The Cossack D. 1844 by Hetman Platoff
21. **Van Tromp** L. 1844 by Lanercost
22. **Voltigeur** D.L. 1847 by Voltaire
23. **Newminster** L. 1848 by Touchstone
24. **Stockwell** L. 1849 by The Baron
25. Andover D. 1851 by Bay Middleton
26. Saucebox L. 1852 by St. Lawrence
27. Musjid D. 1856 by Newminster
28. Kettledrum D. 1858 by Rataplan
29. Caractacus D. 1859 by Kingston
30. The Marquis L. 1859 by Stockwell
31. Gladiateur D.L. 1862 by Monarque
32. Kingcraft D. 1867 by King Tom

1. Alabaculia L. 1773 by Sampson
2. *Matilda* L. 1824 by Comus
3. **Gulnare** O. 1824 by Smolensko
4. **Green Mantle** O. 1826 by Sultan
5. **Variation** O. 1827 by Bustard
6. Vespa O. 1830 by Muley
7. Pussy O. 1831 by Pollio
8. **Queen of the Trumps** O.L. 1832 by Velocipede
9. **Industry** O. 1835 by Priam
10. **Lady Evelyn** O. 1846 by Don John
11. *Rhedycina* O. 1847 by Wintonian
12. **Songstress** O. 1849 by Birdcatcher
13. **Marchioness** O. 1852 by Melbourne
14. Mincepie O. 1853 by Sweetmeat
15. **Imperieuse** L. 1854 by Orlando
16. **Caller On** L. 1858 by Stockwell
17. **Queen Bertha** O. 1860 by Kingston
18. **Regalia** O. 1862 by Stockwell
19. Brigantine O. 1866 by Buccaneer
20. Hannah O.L. 1868 by King Tom
21. **Apology** O.L. 1871 by Adventurer
22. Enguerrande ½ O. 1873 by Vermouth
23. **Jenny Howlet** O. 1877 by The Palmer
24. **Geheimniss** O. 1879 by Rosicrucian
25. Dutch Oven L. 1879 by Dutch Skater
26. **Busybody** O. 1881 by Petrarch
27. **Mrs. Butterwick** O. 1890 by St. Simon
28. Amiable O. 1891 by St. Simon
29. **La Sagesse** O. 1892 by Wisdom
30. *Canterbury Pilgrim* O. 1893 by Tristan

33. George Frederick D. 1871 by Marsyas
34. Robert the Devil L. 1877 by Bertram
35. **Ormonde** D.L. 1883 by Bend Or
36. **Ayrshire** D. 1885 by Hampton
37. **Donovan** D.L. 1886 by Galopin
38. Common D.L. 1888 by Isonomy
39. **Isinglass** D.L. 1890 by Isonomy
40. **Ladas** D. 1891 by Hampton
41. Sir Visto D.L. 1892 by Barcaldine
42. **Persimmon** D.L. 1893 by St. Simon
43. Jeddah D. 1895 by Janissary
44. Wildfowler L. 1895 by Gallinule
45. Diamond Jubilee D.L. 1897 by St. Simon
46. Volodyovski D. 1898 by Florizel II.
47. Doricles L. 1898 by Florizel II.
48. Ard Patrick D. 1899 by St. Florian
49. Wool Winder L. 1904 by Martagon

31. Cap and Bells II. O. 1898 by Domino
32. Pretty Polly O.L. 1901 by Gallinule
33. Signorinetta D.O. 1905 by Chaleureux

6 Free Generations.

1. John Bull D. 1789 by Fortitude
2. Hannibal D. 1801 by Driver
3. **Teddington** D. 1848 by Orlando
4. Daniel O'Rourke D. 1849 by Birdcatcher
5. **West Australian** D.L. 1850 by Melbourne
6. Ellington D. 1853 by Flying Dutchman
7. Gamester L. 1856 by The Cossack
8. **Thormanby** D. 1857 by (Melbourne) or Windhound
9. **St. Albans** L. 1857 by Stockwell
10. **Macaroni** D. 1860 by Sweetmeat
11. **Lord Clifden** L. 1860 by Newminster

1. The Yellow Filly O. 1783 by Tandem
2. **Wings** O. 1822 by The Flyer
3. *Deception* O. 1836 by Defence
4. **Crucifix** O. 1837 by Priam
5. Our Nell O. 1839 by Bran
6. **Mendicant** O. 1843 by Touchstone
7. **Mincemeat** O. 1851 by Sweetmeat
8. **Blink Bonny** D.O. 1854 by Melbourne
9. *Governess* O. 1855 by Chatham
10. **Sunbeam** L. 1855 by Chanticleer
11. **Fille de L'Air** O. 1861 by Faugh-a-Ballagh

12. **Blair Athol** D.L. 1861 by Stockwell
13. **Lord Lyon** D.L. 1863 by Stockwell
14. **Favonius** D. 1868 by Parmesan
15. **Cremorne** D. 1869 by Parmesan
16. Wenlock L. 1869 by Lord Clifden
17. **Doncaster** D. 1870 by Stockwell
18. Craig Millar L. 1872 by Blair Athol
19. **Kisber** D. 1873 by Buccaneer
20. **Bend Or** D. 1877 by Doncaster
21. Ossian L. 1880 by Salvator
22. Kilwarlin L. 1884 by Arbitrator
23. Cicero D. 1902 by Cyllene
24. Troutbeck L. 1903 by Ladas

12. Achievement L. 1864 by Stockwell
13. **Formosa** O.L. 1865 by Buccaneer
14. **Lonely** O. 1882 by Hermit
15. Musa O. 1896 by Martagon
16. La Roche O. 1897 by St. Simon
17. Scêptre O.L. 1899 by Persimmon

7 Free Generations.

1. Bloomsbury D. 1836 by Mulatto
2. Warlock L. 1853 by Birdcatcher
3. **Iroquois** D.L. 1878 by Leamington

1. **Brown Duchess** O. 1858 by Flying Dutchman
2. *Miss Jummy* O. 1883 by Petrarch
3. *Memoir* O.L. 1887 by St. Simon
4. **La Fleche** O.L. 1889 by St. Simon

The names of stallions and mares printed in heavy type in above list distinguish those successful in breeding. As this classification is especially difficult with mares, a number of same are further distinguished by printing in italic type as doubtfully successful. There is still to be noticed that the stallions and mares born after 1895 have not come into consideration, as the time of their activity is still too short to rightly classify them.

Number of male and female winners of Derby, St. Leger and Oaks arranged according to free generations.

Free Generations.	Born before and in 1905.			Born before and in 1849.			Born between 1850 and 1905 inclusive.		
	Colts.	Fillies.	Total.	Colts.	Fillies.	Total.	Colts.	Fillies.	Total.
0	1	—	1	1	—	1	—	—	—
1	5 (1)	4	9 (1)	3	4	7	2 (1)	—	2 (1)
2	24	22 (1)	46 (1)	18	17	35	6	5 (1)	11 (1)
3	50 (4)	34½ (3)	84½ (7)	39 (1)	24 (1)	63 (2)	11 (3)	10½ (2)	21½ (5)
4	50 (3)	36	86 (3)	40 (2)	24	64 (2)	10 (1)	12	22 (1)
5	49 (9)	32½ (5)	81½ (14)	24 (1)	12 (1)	36 (2)	25 (8)	20½	45½ (8)
6	24 (3)	17 (3)	41 (6)	4	6	10	20 (3)	11 (3)	31 (6)
7	3	4 (2)	7 (2)	1	—	1	2	4 (2)	6 (2)
Total	206 (20)	150 (14)	356 (34)	130 (4)	87 (2)	217 (6)	76 (16)	63 (8)	139 (24)

The figures in brackets indicate the number of winners in two classical races. Each of the winners in dead-heat races is counted with ½. From the above unfortunately small statistics of the above table one can draw the following conclusions :—

1. On the whole the most of the classical winners are found among the 4 free generations, next to which follow 3 and 5 free generations.

2. Up to the middle of the past century the 4 free generations predominate also. The 3 free generations, however, excel remarkably the more removed inbreedings with 5 free generations, as also the 2 free generations do the 6 free generations.

3. From the middle of the past century up to now the whole picture has been changed in favour of a more removed inbreeding. Here the 5 free generations appear to be the most favourable only, after which follow the more removed inbreedings with 6 free generations, and finally that with 7 free generations.

4. Lastly, it is worthy of note that the winners of two classical races have been more numerously represented with the more removed inbreedings.

The same change in favour of the more removed inbreeding is shown in the following table, in which the percentage of stallions and mares most successful in breeding is reckoned from the above list. Accordingly, the

percentage of stallions most successful in breeding increases with the number of free generations up to 6 free generations, in the case of mares even up to 7 free generations. Although the statistics are somewhat small for these conclusions, and the right assessment of the stallions, and especially of the mares, with regard to their successful activity at the stud, is often very difficult, the regular increase is still worthy of note. There is yet to be mentioned that every doubtfully successful mare has been counted in the following table only with ½.

The male and female winners of Derby, St. Leger and Oaks born until the year 1895 inclusive.

Free Generations.	Colts.			Fillies.		
	Number.	Amongst which successful in breeding.		Number.	Amongst which successful in breeding.	
		Number.	%		Number.	%
0	1	0	0		—	—
1	4	0	0	4	1	25
2	24	5	20,8	22	6	27,2
3	49	12	24,5	32	19½	60,9
4	47	12	25,5	35	22½	61,2
5	44	14	31,8	30	20½	68,3
6	22	13	59,1	14	10	71,4
7	3	1	33,3	4	3	75,0
Total	194	57	29,4	141	82½	58,5

In the above list of classical winners also proved in breeding is omitted Flying Fox, as he was only born in 1896. He was bought by Mr. Blanc for a million francs at the auction. His successes on the racecourse were remarkable, and at the stud, at least at the commencement, he was strikingly successful. His expensive purchase further proved to be a good business. Many breeders have been induced by this example to risk such close inbreeding (1 free generation) in the hope of obtaining similar successes. An exact study of the Thoroughbred breeding, and an impartial consideration of this case, would have been able to provoke many scruples. Flying Fox was a grandson of the marvellous horse Ormonde, and his father, Orme, who, as is well known, nearly died of poisoning shortly before the Derby, was just as remarkable a horse. Bred in England's best stud, trained by the past-master, Porter, on the hilly training-ground of Kingsclere, and set apart as stud stallion in France's best stud, Flying Fox has been bred to as many first-class mares as perhaps any other sire in England or France. His off-

springs were reared and trained regardless of cost, and finally ridden in an excellent manner by the best jockey we had in Europe since the death of Archer. All these things are powerful forces, which ought to increase much the chances of the offsprings of Flying Fox and repair much that exaggerated inbreeding had damaged. If Flying Fox should once—which I doubt—leave behind in his progeny imperishable pillars of Thoroughbred breeding, he would be, by the side of many miscarried attempts, the third successful one of this group (with 1 free generation). Paulowitz, born 1813 by Sir Paul, foundation sire of Buccaneer, was the first, but even his success commenced first with his grandson, Ion, when the latter produced the Derby winner Wild Dayrell. The second is Barcaldine, born 1878 by Solon, and sire of Whitefield, Morion, Goodfellow (sire of Chalereux), Espoir, Wolf's Crag, Sir Visto, and Marco. If Flying Fox became at any time the third in this group, perhaps the natural power of the virgin soil or the excellent horse pastures of Argentine, where two of his sons now breed, will cause this. Where and what are, however, the four own brothers and two own sisters of Flying Fox? *Exempla docent!*

CHAPTER V.

Hereditary Faults.

FIRST of all the question to be answered is, What is transmitted? Incredible small details and shades in the build, the walk, and temperament are transmitted. Above all, the proportions of the individual parts of the body are transmitted, as well as the length and smoothness of hair, small hair-curls, courage and timidity, malignity and confidence, bad or good fertility, even immunity against certain illnesses; longevity, habits, acquired faculties; in short, nearly everything. So-called hereditary faults, however, as blindness, spavin, biting, broken windedness, roaring, etc., are more seldom transmitted, sometimes not at all.

In spite of the intentional use for many years of breeding material which suffered from periodic ophthalmia (moon blindness), we did not find in Trakehnen any examples of the transmission of blindness, or of the disposition thereto, arising from periodic ophthalmia. In many low-lying districts (in Trakehnen, the Kalpakin Farm), and especially by clover hay from undrained fields, horses are often afflicted in damp years with periodic ophthalmia, which frequently leads to blindness. According to experiences at Trakehnen, foals of blind mares are no more subject to the periodic ophthalmia than others, perhaps even less so. According to the latest researches into the nature of spavin and periodic ophthalmia, scientific men (in the first rank Professor Dieckerhoff in a lecture in 1901 on the subject of hereditary faults in breeding horses) have pronounced against their inheritance.

In the following list, the names of 25 brood mares in Trakehnen are given, which, in consequence of periodic ophthalmia became blind of one eye. This blindness usually occurs with brood mares before their sixth year, often even in their first year. In some cases the brood mares mentioned also became, in the course of time, blind of the other eye. These brood mares have up to the summer of 1907, produced 181 living foals, of which up to now (August, 1907) only 2 have suffered from periodic ophthalmia, *i.e.*, firstly, the colt Jörn Uhl by Optimus out of Jesi (No. 10 of the list), born

List of Brood Mares at Trakehnen which became Blind in consequence of Periodic Ophthalmia (Moon Blindness).

No.	Names of Brood Mares	Born	Sires of Brood Mares	Of which were Living Foals	Country Stallions	Brood Mares
1	Ecke	1871	Venerato	16	3	3
2	Ebbe	1876	Venerato	8	2	1
3	Instanz	1879	Journey	16	4	4
4	Hydra	1881	Journey	13	4	7
5	Trojanerin	1881	Hector xx	16	4	6
6	Prag	1882	Tunnel	13	4	2
7	Pereskie	1884	Fürstenberg	7	2	2
8	Alda	1885	Tunnel	12	1	3
9	Veglia	1891	Barometer	5	—	1
10	Jesi	1893	Hirtenknabe	8	2	2
11	Pyrotechnik	1893	Euphony xx	6	2	—
12	Ibiza	1894	Mirmidone xx	8	2	1
13	Jugendliebe	1894	Leporello	6	—	2
14	Learose	1894	Leporello	5	1	1
15	Daniela	1895	Orcus	5	—	1
16	Handarbeit	1896	Euphony xx	7	1	1
17	Livonia	1896	Mephisto xx	6	—	—
18	Jedwede	1897	Euphony xx	5	1	—
19	Andacht	1898	Fanfarro	3	—	—
20	Gunst	1898	Le Borda xx	4	—	—
21	Arche	1899	Larifari	4	—	1
22	Marterbank	1899	Moeros xx	1	Still too young	
23	Arende	1900	Larifari	3		
24	Artistin	1900	Piper	2		
25	Paarung	1900	Piper	2		
			Total	181	33 Including 3 Royal Stud Stallions	38

29th of March, 1903. The first attack occurred on the 8th of April, 1903, and the second, 8th of October, 1904. In both instances it was in the left eye (the dam was ill and became blind also in the left eye). These two attacks were completely cured. As a three-year-old, Jörn Uhl was found to be sound of eye, and was sent as a country stallion to Gudwallen, where he stands still to-day. The second is a case of a colt, Thronerbe by Optimus out of Trojanerin (No. 5 of the list), born 16th November, 1903. Thronerbe was the 16th foal of Trojanerin (23-year-old), who first became blind in the left eye, and later on blind of both eyes, caused by periodic ophthalmia. He caught periodic ophthalmia on the 12th of November, 1903, and was cured, the disease leaving a small cataract behind. In damp years, periodic

ophthalmia is fairly frequent in Trakehnen. From the 1st of April, 1902, to the 1st of February, 1904, for instance, 48 horses (chiefly weaning foals, yearlings and two-year-olds) caught the periodic ophthalmia. Of the 48 ill ones, 17 were cured without leaving behind any abnormal changes in the eye. Also in the case of brood mares which suffered from periodic ophthalmia, but which did not become blind, and were cured of same without leaving behind some abnormal changes, there was not observed any transmission of a disposition to this disease in their progeny. On the contrary, as in the case of the 25 blind mares, there seems to occur the transmission of a certain immunity against the disease mentioned.

I know several cases in East Prussia, which go to show that the breeding use of stallions which have become blind, through periodic ophthalmia, is harmless. I await with special interest the results of two stallions (Elfenfels 1901 by Obelisk out of Elisenau, and Musensohn 1901 by Optimus out of Mumme), each of whom became blind of one eye in Trakehnen, through periodic ophthalmia, and who have been covering since 1905 up to the present time in the Livland Stud, Torgel. I also still await the result of Royal Stud stallion Ingrimm, who has been covering since 1907 in Trakehnen, and who became blind of his right eye in 1904, through periodic ophthalmia.

The scientific researches into the nature and causes of spavin and ringbone have so far succeeded that neither of them may be taken as a uniform disease. The researches and opinions on spavin of horses published by Professor Eberlein (Berlin, 1897), have been verified by many celebrated scientists. One may easily accept Eberlein's views as to the nature and origin of spavin, also for ringbone, just as I myself do hereafter, without wishing to give even an approximately exhaustive explanation of the many variations and differences of spavin and ringbone.

Spavin as well as ringbone are caused either by contusion of the joint bones or by a stretching of the ligaments which hold the joint bones together, or, in other words, always by a traumatic cause. Spavin or ringbone in consequence of a rachitic disease happens very seldom in our modern improved breeds. I, at least, have never come across such a case. In the case of spavin or ringbone caused by contusion, there ensues, in consequence of a strong and sudden pressure on the bone substance, an inflammation of the bone, at first becoming loose and then tight (*ostitis rare faciens et condensans*). In the case of spavin this inflammation of the bone will principally affect the cuneiform bones (*os centrale and os tarsale* III); in the case of ringbone it will affect the long pastern bone and the short pastern bone. In consequence of the inflammation of the bones, the nourishment of the articular cartilage suffers; there ensues an inflammation of articular cartilage (*chronditis*), and thus are caused the exudations and proliferations of bone originating in the articular surface, assuming very different dimensions, attacking the neighbouring periost, and afterwards developing into bone

substance (formation of Osteophytes). Thus arises the real spavin or the articular ringbone.

In the case of spavin caused by stretching (*periarthritis*), or ringbone (*periarticular*), the exudations of the bone begin from the appendage pieces of the torn ligaments, and not from the joint surfaces. They may then spread round the joint, and in serious cases also attack the joint surfaces, which they destroy, just as in the case of the articular form of the disease. Spavin commencing at the joint ligaments and the periost is very rare. This may be explained by the fact that, in the case of the so-called small ankle-joints, the joints are very tight (as opposed to the coronet joint), admitting of no, or at least very slight, sideway movements. If the spavin originates at the appendage of the side ligaments or the periost, a push or a blow has generally been the cause of it. Perhaps the so-called break (in German Absats), which is so frequently found in the case of covering stallions, belongs very often to this periarthritic form of spavin. According to Professor Eberlein, the proportion of the frequency of spavin caused by pressure to that caused by tearing, is as 95 to 5, while in the case of ringbone (according to Udrisky) the frequency of articular to periarticular is as 60 to 40.

Professor Eberlein writes about the transmission of spavin as follows:— "The question, May horses attacked with spavin disease be used for horse breeding or not? is a very important one for horse breeding. Against the previously held views, Dickerhoff rightly emphasises that every genuine case of spavin deserves a special judgment in this respect. As I have shown, when discussing Aetiology, the primary *Ostitis rare faciens* of the small tarsus bones owes its origin to a mechanical contusion of the small tarsus bones, and may arise even in the best formed hocks and thighs from outside causes. Therefore spavin is in itself not hereditary. Scientifically it is proved, however, that a deficient formation of the hocks and a faulty position of the thighs, which predispose a horse to this disease (*causa interna*) are transmitted. Thus it follows that with regard to spavin, only horses with defective hocks or a faulty position of the thighs on the one hand, and badly constructed bones on the other hand, must be excluded from breeding."

I fully subscribe to the view of Professor Eberlein, and extend the same also to ringbone, which, in my opinion, in itself is just as little transmittable as spavin. With regard to ringbone, I should like to mention yet that horses with short and upright pasterns are more liable to be attacked by the articular ringbone arising from contusion, while horses with long and sloping pasterns are more exposed to the periarticular ringbone arising from tearing.

The certainty with which scientists and laymen have believed in the undoubted transmission of spavin, ringbone, and moon blindness, shows very clearly the low standing of horse breeding as a science. I do not know of any recognised practical example as a proof of the transmission of spavin, neither have I ever met anyone who could point out to me such an

example. As far as I know, the following horses had the opportunity to transmit spavin :—

1. Percival, born Trak. 1867, by Lahire xx and Peranga by Oromedon, was for four years country stallion in Gudwallan, and was stabled at Röseningken. In 1872 he was set aside because he distinctly showed spavin, and was used very much afterwards as stallion at Georgenburg up to 1885, at that time the private stud of Herr von Simpson. The two hocks of Percival are preserved in the Trakehnen hippological museum, and show that he suffered from spavin, caused by contusion. Among his very numerous foals (about 200 military remounts, 50 brood mares, and 25 country stallions), I have heard of none being suspected of spavin. Among the sons of Percival, Capitain, born 1881, later stallion in Georgenburg, must be specially mentioned, because he was used very extensively for five years in Georgenburg, was then sold as stallion to Münich, and was the sire of the chestnut stallion Blondel, born 1886, which won a prize in Berlin in 1890 at the great horse show, and was afterwards sent to Beberbeck as Royal Stud stallion. Among the whole of his progeny I never heard of one suspected of spavin.

2. The well-known Derby winner Mündig, born 1832, according to the description of the prepared left hock given by the stud inspector, Kutzbach (published in a hand-book for horse breeders by Count Lehndorff, page 143), undoubtedly suffered from spavin caused by contusion, just as Percival did. Mündig was for five years Royal Stud stallion in Trakehnen, and afterwards for four years in the private stud of Julienfelde, in East Prussia, with very excellent results. His progeny showed no signs of spavin.

3. Optimus, born 1880, by Odoardo and Optima by The Colonel, had spavin on the near hind, as can be distinctly seen from the skeleton, preserved at the hippological museum at Trakehnen. Among his very numerous progeny, I do not know one case of spavin; on the contrary, the Optimus progeny excel, like their sire, in their very good and strong hocks.

4. The Thoroughbred sire, The General, born 1882, by Childeric and Coturnix, suffered already from spavin when Royal Stud stallion at Trakehnen, and was afterwards always lame of spavin. Neither at Trakehnen, nor during his sixteen years' activity at Gudwallan, has he, as far as I know, produced any progeny with any suspicion of spavin. He was for many years the Thoroughbred sire in the Gudwallan district, which has produced most military remounts (about 300). Moreover, he has produced in Trakehnen 15 country stallions and 10 brood mares, and in Gudwallan about 20 brood mares afterwards registered in the East Prussian Stud Book.

5. The Derby winner Hermit, born 1864, had spavin on the near hind, as his skeleton, which is preserved in the London Veterinary School, distinctly shows. His very numerous progeny, however, excelled in good and strong hocks. I do not know of one single offspring of Hermit suffering from spavin.

6. The Trakehnen brood mares, Aqua, Emina, Ina, and Juniata, suffered from spavin (the hocks are in the Trakehnen Museum), and of their very numerous progeny none was suspected of spavin.

The Thoroughbred stallions, Blue Blood born 1876 by King Tom and Marigold, and Elsass born 1870 by Napoleon and Esther, suffered from ringbone (Periarticular). The respective preparations of the two stallions are in the Trakehnen Museum. Blue Blood has not transmitted this disease in Trakehnen, and I am assured the same thing about the progeny of Elsass. I believe, however, that the disposition to articular ringbone is often transmitted, as the upright pasterns, bulging out somewhat to the front, lend themselves easily to transmission. In some breeds of horses there are whole families which are addicted, more or less, to articular ringbone, whilst I do not know a similar case of periarticular ringbone or spavin. It is difficult to work horses lame from spavin. Their development without work is unfavourable. This is the only reason that horses which are lame from spavin when young are little suitable for breeding purposes.

The crib-champing, gasping, tongue-sucking bad habits, to which for the most part only very tough and durable horses are addicted, are, according to experiences in Trakehnen, transmitted by the sire to about 5 per cent. of his progeny. I presume that brood mares also transmit these faults to about the same extent. I do not know of any actual examples as, in spite of using for many years five brood mares which were crib-champers, not one of their foals has inherited it. I must here remark that gasping and tongue-sucking are transmitted just as seldom as crib-champing. I have known some cases, on the other hand, in which nearly 50 per cent. of the foals of a brood mare, who herself was not a crib-champer, became already as foals crib-champers, without their parents or grandparents having been addicted thus. It is an old rule that stallions which are crib-champers do not transmit it if burnt on account of a break-down. This is right in those cases only in which the stallion has acquired this habit through ennui after a break-down, during the repose which follows the burning and which lasts for many weeks. This crib-champing is not transmitted as easily as that which foals acquire whilst grazing, without any reason. Finally, I consider that the chances of transmitting crib-champing, or the disposition thereto, is so very small that the breeder need not to take it into consideration. If the lameness caused by spavin, or blindness, or broken wind, interferes with the gymnastic development of the body, and if crib-champing often causes attacks of colic, I would not, of course, recommend such animals for breeding material.

The question on the transmission of roaring is more difficult. In the first place, roaring seems to be more general in certain breeding districts. The damp and foggy climate of England produces more roarers than France, but in America and Australia they are the exception. The early born foals are in England said to be more inclined to roaring than the late born ones. Roaring is a consequence, principally, of the break-down of the hindmost,

mostly left, aspergillum muscle (crico-arytaenoideus) or its nerve, which affects the movement of the aspergillum cartilage necessary for easy breathing. If this break-down has been caused by severe glanders, influenza, or by over-exertion from racing, only at the end of the third or fourth year, as in the case of Ormonde, a transmission of roaring is not to be expected. I do not know of any roarer in the progeny of the roarer Ormonde. Prince Charlie has not transmitted this roaring in America. Pocahontas and Chamant were roarers. The former did not transmit it at all, and the latter very seldom. The well-known Humphrey Clinker of former times did not transmit his roaring at all, and the most popular stallion of modern times, Gallinule, does not seem to transmit his roaring either. If the roaring, however, commences without any special exertions in racing, and especially so soon as in the second year, one may reasonably assume that the general weakness of the horse is the cause. Weakness in horse breeding is the only real hereditary fault which is transmitted with certainty, and it should be eradicated by the most severe measures from the breeding material. I once knew a very much pampered stallion which apparently was not a roarer, at least not when galloping the pace he could well perform, but of his progeny about 50 per cent. were roarers when they were trained for a few months as two or three-year-olds. The more tenderly the horses of a breed are reared, the more roarers will appear. For this reason the Drafters, which are reared under the pressure of unreasonable shows, mostly become roarers. After these come the different Half-breds, according to the tenderness or severity of the method of rearing, and the fewest roarers are found amongst Steppe horses and Thoroughbreds. The only difference is that, in consequence of public races of Thoroughbreds, every roarer is recognised and becomes known, or that many become roarers on account of the too great exertion, which is not expected from other breeds of horses.

The same thing applies to horses whose sinews have broken down through over-exertion in training or racing. Horses which break down already as two-year-olds in racing, or even in training before racing, may be suspected of weakness. The worst, however, are those which are so bad that they cannot break down because they lack the energy and the stride, without which they are not subject to those shocks which produce the breakdowns. Of such horses the Englishman says, "They can never go quite fast enough to trouble themselves."

All dispositions to disease and constitutional weaknesses, such as biliousness, bony excrescences, soft and deformed hoofs, as well as all other diseases connected with inflammatory swelling (Einschuss) are transmitted. Broken-windedness belongs also to constitutional weakness, and is easily transmitted by stallions which suffered from it in their early years. In consequence of illness, and other unknown causes, the transmission by stallions differs in certain years. For example, after influenza, a more unfavourable transmission has been often noticed. Horses which have run much transmit

their characters sometimes worse in their early years. Ormonde, however, produced in his first covering year his most important son, Orme, and the latter again, in his first covering year, four winners, amongst them the tough Ameer, and in the second covering year Flying Fox, who in his turn produced in his first covering year Ajax and Gouvernant. Wild Dayrell produced in his first covering year as a four-year-old his best son, Buccaneer, and Florizel, who ran up to the age of seven years, produced in his first covering year the first Derby winner, Diomed, his best son. Old stallions are said to produce more stayers, and young ones more flyers.

Just as weakness may be considered the only real hereditary fault, in like manner hardiness is to be looked upon as the most important hereditary advantage. With hardiness is combined robust health, the most important quality of all breeding animals. Avoid weakness, improve hardiness, and the Alpha and Omega of horse breeding is obtained for producing capable horses, and not horses simply fit for shows, or horses which during their whole existence are always only sold, but really never made use of; and there are many such!

As, of course, no stud can possess faultless breeding material, one must try to equalise faults in the conformation of brood mares by mating them with stallions which are especially good in these respective parts. Then it will be found that high-leggedness, narrowness, and bad temperament, are faults which are most difficult to remove by mating, and therefore belong to the most serious faults. Mares which feed badly are little suitable as brood mares, because in all probability they will also feed their foals badly. Mares which are inclined to corpulency, also, feed as a rule badly, and are not to be recommended. The same faults are to be blamed in the case of stallions, but they are less dangerous.

CHAPTER VI.

The Transmission of the Coat Colour.

What concerns the heredity of the coat colour? There is, I suppose, a yet unknown originating force which causes a distinct deviation from all other laws of heredity. The sex, too, appears to play a particular part, and the atavism has perhaps no influence at all. Whereas, it is remarkable that a distinct atavism is often evident in the transmission of white marks and particular spots. As in the Royal Stud of Trakehnen, for over a hundred years, in three special studs, blacks (in Gurdszen, 90 to 100 brood mares), browns (in Danzkehmen, 70 to 80 brood mares), and chestnuts (in Jonasthal, 50 to 60 brood mares) have been bred, and in two studs (in Trakehnen 80 to 100 brood mares, and in Bajohrgallen 60 to 70 brood mares) all colours are represented, and mixed with each other, we have plenty of material at hand from which to construct laws as to the transmission of coat colour.

There exists a distinct regularity with grays, chestnuts, and blacks as regards transmission. This regularity is as follows: grays and chestnuts mated only to their own colour, produce either chestnuts or grays, and black with black about 8 per cent. chestnuts (often dark chestnuts), the rest always blacks, never black-brown or dark brown. Here we must mention that rubican horses (also rubican chestnuts) also produce at times grays, as for example, Proserpine (gray) 1903 by Chittabob (chestnut with rubican) and Cybele (chestnut, but I cannot say if with rubican).

In the General Stud Book, Volume XX., I have found two cases, and in Volume III. three cases, in which brown foals have been produced by chestnut parents:—

1. Offertory II. (brown) 1899 by Kirkham out of Gold Wave.
2. Wavemore (brown) 1902 by Ocean Wave out of Make More.
3. Captain Candid (brown) 1813 by Cerberus out of Mandane.
4. Elba (brown) 1815 by Stripling out of Maniac.
5. Earnest (brown) 1805 by Buzzard out of Mandane.

Referring to the first case, it must be mentioned that Gold Wave is by mistake given as a chestnut in Volume XX. of the General Stud Book. In Volume XVII., page 22, Gold Wave, at that time still unnamed, is rightly put down as a brown.

Referring to the second case, the colour of Wave More, who never trod on a racecourse, is either wrongly given, or the dam, Make More (chestnut), has been confused with her own sister, born 1891, who was brown.

In the third case, I suspect that Orville (brown), who during the two years previously covered Mandane, also covered her again in 1812 as well as Cerberus, and that the owner of Cerberus did not mention this covering, which, it seems, was formerly, for different reasons, often omitted. Captain Candid ran second in the St. Leger.

Referring to the fourth case, it must be mentioned that Elba is by mistake given as a brown in Vol. III., page 139. In Vol. III., page 67, and in the Racing Calendar 1818, pages 55 and 147, Elba is rightly put down as a chestnut.

In the fifth case, I suspect that Whiskey (brown), who covered Mandane in 1803 and 1805, also covered her in 1804, and that the owner did not mention this covering.

Many cases in the private studs of East Prussia, in which brown foals are said to be the offspring of chestnut parents, have proved, on closer examination, that their respective dams had been also covered by another stallion who was of a brown colour. Also that this second stallion, either by mistake or for certain reasons, was not mentioned in the certificate of serving (only the covering for one stallion, and that the dearer one, is paid for).

In the appended pedigrees of the best known Thoroughbreds, I have given the colours where possible (only in the German edition). I have not come across any case in which chestnut parents had no chestnut foals. The remarkably certain transmission of the chestnut colour is even completely independent of the colour of the ancestors. There are also cases in which all four grand-parents were browns and yet the two chestnut parents always produced chestnut foals, as for example, with Kincsem, The Biddy (grand-dam of Regalia), and many others. With Maintenon (a chestnut) it must be pointed out as a remarkable circumstance that of the four grand-parents two were brown and two grays, and with Rouge Rose, also a chestnut, three grand-parents were brown and one black. The certain transmission of the chestnut coat colour can still be more clearly recognised with the following chestnuts:—Diomed, Gladiator, Favonius, Hermit, Trampoline, Cambuscan, Pilgrimage, and Merry Sunshine, where not only the two parents, but also the four grand-parents, were brown. In the three last-mentioned cases, of eight great grand-parents, only one of each was a chestnut. The case of the chestnut Le Sagittaire is remarkable, whose sire, Le Sancy, was a gray, and the dam, La Dauphin, was a roan (not a gray as given by mistake in the French Stud Book). Also Dryad (chestnut, and great grand-dam of Delphos), whose two parents, four grand-parents, and eight great grand-parents, were either brown or gray. In the case of Old Heroine, born 1775 (in Birdcatcher's pedigree), we may well take for granted that one of the grays was a roan, or that Old Heroine was a rubican.

When both parents are brown, foals may be of any colour, also gray if one parent is rubican. The majority of foals, however, will likewise be brown. If the parents are of different colours, in most cases the lighter colours are more easily transmitted than the darker ones. Grays transmit their colour the most frequently and blacks the least frequently. Chestnut and black produce most often browns, chestnuts less frequently, and least seldom of all, blacks. Brown and black produce more browns and dark browns or brownish blacks than blacks. Chestnuts and dark browns produce more chestnuts. Chestnuts and light browns produce more brown, and often a dirty chestnut colour. Chestnut colour is the most suitable to get rid of the gray colour. Some of the foals will be brown.

In consequence of the very sure transmission of the chestnut colour, the chestnuts are easiest to renew in Jonasthal. They need not give anything away from their production, and are even increased by additions from the black and brown stud. The Royal Stud of Trakehnen in East Prussia is about 11,200 acres large, and is composed of 12 stud farms, among which, Gurdszen, with 90-100 black mares; Danzkehmen, with 70-80 bay or brown mares; Jonasthal, with 50-60 chestnut mares; Bajohrgallen, with 60-70 mares of different colours; and Trakehnen itself, with 80-100 mares of all different colours, also gray, roan, and piebald—total 350-410 brood mares; with all foals riding, carriage, working horses—altogether 1500-1700 horses.

Remarkable to say, these statements are in opposition to the fact that the chestnuts do not increase amongst Thoroughbreds, and are always in the minority, although the most celebrated foundation sire, Eclipse (of two brown parents), and his four sons, Pot8os, King Fergus, Mercury, and Alexander, were chestnuts; just as the famous stallions which appeared later, *i.e.*, Birdcatcher, The Baron, Stockwell, Blair Athol, Doncaster, Bend Or, St. Albans, Sainfoin, Thormanby, Hermit, and many others, were also chestnuts. In the three principal English races, the coat colour is distributed as follows to the winners and seconds, up to and inclusive of 1907 :—

	Winners		Seconds
Derby Winners :	94 Browns,	Seconds :	90 Browns
	32 Chestnuts,		30 Chestnuts
	1 Black,		3 Blacks
	1 Gray,		5 Grays
	Total 128 horses as winners	and	128 horses as seconds.

	Winners		Seconds
Oaks Winners :	95 Browns,	Seconds :	85 Browns
	31 Chestnuts,		37 Chestnuts
	1 Black,		5 Blacks
	1 Gray,		2 Grays
	Total 129 horses as winners	and	129 horses as seconds.

St. Leger Winners:		Seconds:	
102	Browns,	98	Browns
27	Chestnuts,	31	Chestnuts
1	Black,	1	Black
2	Grays,	2	Grays
Total 132	horses as winners and	132	horses as seconds.

This uniform distribution of the coat colour seems, especially when we consider the certain transmission of the chestnut colour, to point to a special racing capability in connection with the brown colour. A classification according to decades shows a regular diminution of the chestnuts and an increase of the browns among the winners and the seconds. It is remarkable that the predominant colour of the North-African horses was bay or brown, and that, especially in recent years, the most important and best influence on the building up of the Thoroughbreds is ascribed to the North-African horses. It is furthermore remarkable that chestnuts mated to each other produce more colts, and black horses more fillies.

CHAPTER VII.

The Art of Mating.

The most important thing in practical mating at a stud is for the breeder to favour the brood mares more than the covering stallions, *i.e.*, in the case of each brood mare he must consider with which of the available sires she has the best chances of producing a good foal, and not *vice-versa.* People are very much inclined to give to the favourite sires the best mares, although the former are still untried, whilst the latter have already shown their breeding capability. One very often forgets the natural demand that before mating, especially in Half-bred breeding, the special breeding result to be attained in each single case must be clearly pointed out, instead of which people often think that according to the result of the production one can fix its mission in every case afterwards. The uncertainty thereby caused in the judging of the special factors of mating prevents a clear consideration of all necessary points of view. One must endeavour to equalise the faults of the brood mares by corresponding merits of the covering stallions. These faults which have to be equalised do not only consist in a faulty conformation, as for example, misplaced fore-legs, weak hocks, a too long middle part, high-leggedness, narrowness, etc., but also in defects of constitution (hard and tender), of temperament (hasty, idle, good-natured, malign, courageous and cowardly), of walk (wide at the knees, narrow at the knees, slow, and full of action), of performance (stayer and flyer, action in galloping, trotting, walking), of the use of food, and, finally, in lack of quality, beauty and vigour. Statistics seem to recommend the mating of old sires with young mares, and *vice-versa.* In order not to lose sight of all these points of view, it is not only necessary to have an exact detailed knowledge of the brood mares and their previous foals, of the available sires and their progeny, but also of the ancestors. The reversions to grand-parents and great grand-parents (Atavism, as it is called), are so frequent that a breeder who does not duly consider them will have many bitter experiences. Furthermore, a knowledge of the ancestors is required as far as to rightly

judge of the ancestors occurring on both sides—representing, so to speak, a barb—*i.e.*, to rightly estimate the basis of inbreeding when intending inbreeding with 3 to 6 free generations, which is most favourable for Thoroughbreds as well as for Half-breds. The more prominent, and the more suitable in any special case for a desired quality, the common ancestors are as a basis, the closer the inbreeding may be. It is specially favourable, if, as shown in the chapter on inbreeding, several inbreedings with different basis are possible in one mating. Furthermore, certain blood mixings, which experience has already proved to be good, must be preferred. This last point of view is especially important in breeding of Thoroughbreds, unless one breeds Thoroughbreds not for racing, but for riding and hunting. When mating Half-breds, one must first of all consider which breeding result, even which shade within the given breeding lines, seems to be most probable and most attainable in the case of each single brood mare. The object must not be too far removed from the type which the mare herself possesses. A very noble, wiry mare does not recommend herself for the production of a Carossier, and *vice-versa*, unless the foal is considered as the final product, and is not to be used for further breeding.

When mating, it is advisable to look at first only for the most suitable sires according to the pedigree of the brood mare and of the available stallions. For Thoroughbred breeding especially, the compilation of the pedigrees of the mares and of the sires, as well as of the basis of all their inbreedings, in lucid tables, is recommendable, so that one can easily see the possible and the best approved blood mixings, and that the possible and desirable basis of the inbreedings attained by mating may be found. When doing this, one will mostly find several sires which appear suitable. They must then be arranged according to the applicability which is recognised as the most suitable in exclusive consideration of the blood mixing. Then weigh the chances of same according to the other above-named points of view (deficiencies of conformation, constitution, etc.). Now begins the most difficult part of mating, the part which is considered an art, and for which no other advice can be given than to weigh exactly the advantages and disadvantages of each case of mating, and not to sacrifice in one case any more important thing than may be gained in the other. If the result of a mating decided on for good reasons does not turn out well, it is advisable not to proceed at once to another mating, but to try the same mating at least once more. Even with the best mating and the best breeding material, a small percentage will always go wrong. The fertilisation of brood mares is also surer if the covering stallion is not changed. We find the longest series of foals for the most part where the covering stallion has been changed very seldom, or not at all. Even old Fugger is of the opinion that mares conceive easier from that stallion they have been already bred to than by another. I consider the doctrine of so-called saturation wrong, for if it were right, for example, in the case of Thoroughbred breeding, many more half-

sisters and brothers should have won classical races than own sisters and brothers, especially as the number of half-sisters and brothers is larger than that of own sisters and brothers. The following table shows that this is not the case :—

1. Derby Winners.

(a) Own Brothers and Sisters.

No.	Name	Year	Parents
1.	Radamanthus	1787	by Justice and Flyer.
2.	Dädalus	1791	
3.	Archduke	1796	by Sir Peter and Horatio.
4.	Paris	1803	
5.	Whalebone	1807	by Waxy and Penelope.
6.	Whisker	1812	
7.	Lap Dog	1823	by Whalebone-Canopus.
8.	Spaniel	1828	
9.	Persimmon	1893	by St. Simon and Perditta.
10.	Diamond Jubilee	1897	

(b) Half-brothers and Sisters.

No.	Name	Year	Sire	Dam
1.	Spread Eagle	1792	by Volunteer	— Highflyer.
2.	Didelot	1793	by Triumpator	
3.	Ditto	1800	by Sir Peter	and Arethusa.
4.	Pan	1805	by St. George	
5.	St. Giles	1829	by Tramp	and Arcot Lass.
6.	Bloomsbury	1836	by Mulatto	
7.	Galtee More	1894	by Kendal	and Morganette.
8.	Ard Patrick	1899	by St. Florian	

2. St. Leger Winners.

(a) Own Brothers and Sisters.

No.	Name	Year	Parents
1.	Spadille	1784	by Highflyer and Flora.
2.	Y. Flora	1785	
3.	Touchstone	1831	by Camel and Banter.
4.	Launcelot	1837	
5.	Lord Lyon	1863	by Stockwell and Paradigme.
6.	Achievement	1864	
7.	Memoir	1887	by St. Simon and Quiver.
8.	La Flèche	1888	
9.	Persimmon	1893	by St. Simon and Perditta.
10.	Diamond Jubilee	1897	

(b) Half-brothers and Sisters.

No.	Name	Year	Sire	Dam
1.	Van Tromp	1844	by Lanercost	and Barbelle.
2.	The Flying Dutchman	1846	by Bay Middleton	
3.	Common	1888	by Isonomy	and Thistle.
4.	Throstle	1891	by Petrarch	

3. Oaks Winners.

(a) Own Sisters.

1. Musis	1810	} by Waxy and Woodbine.
2. Minuet	1812	
3. Memoir	1887	} by St. Simon and Quiver.
4. La Flèche	1888	

(b) Half-sisters.

1. Rhedycina	1847 by Wintonian	} — Laurel.
2. Governess	1855 by Chatham	
3. Spinaway	1872 by Macaroni	} and Queen Bertha.
4. Wheel of Fortune	1876 by Adventurer	

III.

The Practical Part of Horsebreeding.

CHAPTER I.

Judging and Treating Breeding Material.

(a) Judging Covering Stallions.

FROM each breeding horse, be it stallion or mare, one must demand, first and foremost, certain distinct merits, *i.e.*, prominent parts. Only a breeding horse possessing specially prominent characters is justified in having a few faults, and the less faults it has the greater they may be. The only unpardonable fault of a breeding animal is bad health and weakness connected with it. A too great fear of other faults, which cannot really always be avoided, is the surest way to inferiority. Of course, one will estimate the faults of breeding material differently, according to the object of the breeding in question; further, in consideration of the characters of the other breeding material; and finally according to sex.

In Half-bred breeding, a Thoroughbred sire which has little quality, and which was a distinct cypher on the course, is just as little to be recommended as a Half-bred stallion which is too light in the bone and not of sufficiently correct build. The former ought to transmit to his progeny principally capabilities and quality, and the latter strength and correctness. I myself prefer an untried Thoroughbred to a proved cypher. With the former there is always a chance that he perhaps might have done something of note on the course. Such an untried Thoroughbred stallion which has produced prominently in East Prussian half-breedings was, for example, Cicero born 1882 by Chamant out of Liane, and perhaps also Kerl born 1885 by Lord Colney out of Oceana. In Thoroughbred breeding only a few similar examples are known. At this moment only Golumpus and Y. Melbourne occur to me. With Thoroughbred as well as Half-bred stallions, one great fault is less injurious than several small ones, especially if there are great merits together with the great fault. The best known example of former times for this is Soothsayer, born 1808, by Sorcerer out of Golden

Locks, who had a coarse club foot (Lymphangitis chronica). Only Bay Middleton, born 1883, whose dam, Cobweb, was a grand-daughter of Soothsayer, produced a few foals which also acquired a club foot. Further, the following are to be considered as great faults to be passed over :—A strong, misplaced forefoot, as in the case of Stockwell; a bad hock, as in the case of Birdcatcher and Saxifrage; roaring, as in the case of Chamant, Gallinule, Hawkstone (Euphony's sire), Vorwärts (Half-bred in Trakehnen), crooked fore-legs, as in the case of The Wizard (grand-sire of Optimus) and Hannibal; crib-champing, or gasping, as in the case of Euphony, Möros, and Mirmidone; strong wind-gall, as in the case of Marsworth; bad temperament, as in the case of Barcaldine, Friponnier, and Flugel (Half-bred in Trakehnen), etc. The progeny of the above stallions, in Thoroughbred and Half-bred breeding, has shown that even great faults may be combated with success, and that the blood streams of first-class stallions have been thus rightly preserved for breeding purposes. A great fault in walking—for example, a much misplaced fore-foot—is easier to eradicate by correct mating than an undecided walk without a great fault, as in the case of the Derby winner Ladas, who seems to walk sometimes close at the knee and sometimes wide at the knee, and who, almost without exception, transmits a bad walk. The fear of faults, especially distinct faults which any fool sees at once and criticises, has just as stagnating an effect in breeding as elsewhere in life, political or scientific.

Thoroughbred as well as Half-bred stallions must show the breeder distinctly for which parts he may expect a prominent transmission, also specially suited for improvement, and for which parts he must be particular about when mating. One may obtain success in one direction, but seldom in several directions at the same time. A pronounced sire with a distinctly sharp build, a free movement from the shoulders, a courageous eye and good health, together with a thin mane, a thin, well-carried tail, shows at once a good covering stallion. Without going into the well-known demands for exterior, I would like to briefly mention that I prefer a too short neck to a too long one, and pasterns which are too long and soft rather than those which are too short and upright. Further, straight hind legs rather than those which are too curved, and a knee which is a little protruding to a knee which is too tapered.

From the table on page 185, it can be seen that the height of 15.3 hands to 16.1 hands is apparently the most favourable for Thoroughbreds. The same heights are also the best for Half-breds, if the object of the breeding is particularly aiming at capabilities. Greater heights are often demanded in many studs in order to satisfy customers, but, unfortunately, at the cost of capabilities. Here we again come across the old fight between appearance and the real thing. One may here see the danger; how that vanity, folly and want of taste may drive breeders into the production of

appearances by producing exaggerated heights, which all modern improved breeds *nolens volens* aim at.

In Half-bred breeding as well as Thoroughbred breeding, I prefer, all things being equal, the flyer to the pronounced stayer. For Thoroughbred breeding it is certainly more important that the stallion can travel quickly over short distances than that he can stay for long distances. The best stayers of recent times were: Gladiateur, Thurio, Foxhall and Sheen, who, although they had good, and even the best chances, only transmitted moderately. The phenomenal stayer, Fisherman, has not left one first-class sire behind him in Australia. Pronounced flyers over one mile who have transmitted well are, for example, Buccaneer, Isonomy, Gallinule, Energie and Hannibal, etc. On account of their high class, flyers have also frequently won longer races, as for example, Isonomy as a four-year-old. Also Chamant, who has equally well transmitted in Thoroughbred and Half-bred breeding, was a distinct flyer, and proved himself as such, especially when winning the 2,000 Guineas, against the subsequent Derby winner, Silvio. Even the great Ormonde won his races generally by the tactics of a flyer.

The best selection of chief covering stallions for Half-bred breeding is especially difficult, because the objects to be attained are much more manifold than in the breeding of Thoroughbreds, which only are wanted for winning races. Of course, these different objects in Half-bred breeding can easily be simplified by taking as the final aim of breeding a satisfactory supply of the country studs with country stallions, and not the sufficient capabilities and endurance of cavalry remounts. The latter, however, is the chief and final purpose of the most important part of Prussian Half-bred breeding. Here again, however, as so often in life, especially in official life, the question arises: Shall the affairs be so conducted that people are first contented and cause no unpleasantness, or shall they be so arranged that one expects to gain the greatest advantage for the public welfare to man's best knowledge and belief? The first method is the one usual in America, where men laugh at an idealist who desires to further the cause, and, as they say, wants to make man happier than he can comprehend.

The less Thoroughbred breeding produces good and strong fundaments the more burning becomes the question to the Half-bred breeder as to in which way he may do justice to this most important requirement in Half-breds. The history of Half-bred breeds in Germany, as well as in other countries, shows how bad—almost ruined—many studs have become by refinement and deterioration of the fundaments. That is the heel of Achilles in our Half-breds, for one can scarcely over-estimate the importance of a good fundament for a soldier's horse. The work of the breeder in this respect is the most important, as well as the most difficult one.

Unfortunately, one has tried almost everywhere cross-breeding with Draft breeds. The favourable results which have often in the first genera-

tion been attained by this coarse crossing, have induced many breeders, even some Irish Hunter breeders, to continue breeding on this line. Even Irishmen, however, on their admirable breeding grounds, soon found out that the progeny of these coarse cross-breds was a failure, because it is just the coarseness and the weakness of the Drafter, and the light fundament of the Thoroughbred, which most surely are transmitted. Irishmen have, in good time, got together the remains of their ancient old Half-bred, called draft horse (not cold blood), the best of which are found in County Roscommon. In more recent times they are again trying, with the help of the remains of their former native Half-bred horse, to produce the same good and strong fundament which their horses formerly possessed to a greater extent, but which had been spoiled by mediocre Thoroughbreds and coarse Drafters.

In this strengthening of breeding material, it is at first necessary, in Ireland as well as in Germany, to improve the fundament of brood mares —a very difficult, unpopular and unpoetical work indeed; because, if one strengthens, there is also brought into the breeding many ugly, unavoidable traits. One must not forget, however, that the ennobling and beautifying is afterwards the easiest work in Half-bred breeding. The most difficult work is to find or breed Half-bred stallions which may be used for the above-mentioned purpose. According to the actual constitution of our Half-breds and Thoroughbreds, the use of Thoroughbred stallions alone is not sufficient for making good progress. I further do not believe that one will be able to breed such a strong Half-bred stallion with the desired fundament direct from a Thoroughbred stallion. In my opinion two generations will be necessary to obtain by right mating, feeding and exercise, what is wanted. If the mating has succeeded and the soil furnishes the necessary bone-making food, one will be only able to obtain a good and strong fundament, such as we have in the Steppe horses, to perfection, by grazing lasting as long as possible, by exercise in the summer, and by a systematic daily long exercise in the winter.

If the breeder has succeeded in producing such a Half-bred stallion with a strong fundament, he must also have the courage to make good use of him, in spite of some faults which he may undoubtedly have, and which the merest dilettante can easily recognise. These faults which must be passed over will be mainly lack of beauty, harmony and quality, also, unfortunately often, a bad walk. The swinging and correct walk will most certainly be bred in later, at the same time as the breed is ennobled by Thoroughbreds. Such a bony Half-bred stallion which has become big and strong in work will always, especially in its younger years, look angular and ugly. Such a stallion will rarely gain the affection of young breeders. These latter will for the most part try to attain agreeable ideals, such as are embodied in the noblest Thoroughbred, and will trouble themselves less with the wearying cares just mentioned.

(b) Judging Brood Mares.

What I have said about stallions may also be said about the conformation of brood mares; yet in the case of the latter a greater length of trunk is allowed, even if the middle part should suffer thereby. The feminine character always finds distinct expression with good brood mares. Vampire, the dam of Flying Fox, with her conspicuous stallion neck and unfeminine coarseness, belongs to the exceptions, and besides the 1899 Derby winner has not produced anything useful. Mares with pronounced hooked teeth are nearly always bad dams, and very often barren. Statistics further teach us that small, wiry mares are preferable to large, so-called show mares. If the dams of classical winners are divided according to their conformation into the three military classes—Cuirassiers, Uhlans and Hussars—the most approved brood mares will be found in the last lot. Good brood mares of the Cuirassier class are few. Vergissmeinnicht and Pulcherrima, perhaps the best approved brood mares in Graditz, were only Hussar types, just as Sweet Katie (dam of Flibustier, Amalie von Edelreich and Waisenknabe), La Traviata (dam of Bauenfanger and Hochstapler), La Fille du Regiment (dam of Grimston and Primas), Cantata (dam of Hymenæus), Gorse (dam of Goura and Goodhope), Dirt Cheap (dam of Trachenberg), B Flat (dam of Paul and Flatterer). Of English mares may here be mentioned Perditta (dam of two Derby winners), also Medora (dam of Zinfandel). Of Cuirassier types which have produced a Derby winner or similar, I only know—in England, St. Gatien's dam, St. Editha; in Ireland, Morganette (dam of Galtee More and Ard Patrick); in France, Val D'Or's dam, Wandora, and Jardy's dam, Airs and Graces; and in Germany, Zama (Hannibal's dam). Hippia, herself an Oaks winner, is also a big-framed Cuirassier horse, and yet she could not produce anything better than Gunnersbury by such a good sire as Hermit. I have made the same observations in the Half-bred breeding at Trakehnen. The so-called light riding horses in Trakehnen supply the best covering stallions. The strongest brood mares in Gurdszen supply fewer good covering stallions, and more seldom still chief stud stallions. The dams of the chief stud stallions Polarsturm, Prince Optimus and Alter Herr, had scarcely the calibre to be put even in the class of brood mares for so-called light riding horses. Moba also, the dam of Morgenstrahl, belongs to the Hussar type, and the heights of some celebrated brood mares given below support this theory. Unfortunately, I know only the height of a few of them, and even these few, when compared with the heights of prominent stallions given on page 185, show that the most favourable size for brood mares is about 155 to 160 cm. (15 hands 1 inch to 15 hands 5 inches), therefore at least 5 cm. less than the most favourable height of stallions.

Heights of Famous Thoroughbred Mares.

No.	Names of Mares	Born	Sire	Size in Hands.	Inches.	cm.
1	Queen Mab	1785	Eclipse	14	3	149,9
2	Maniac	1806	Shuttle	15	2	157,5
3	Velocipede's dam	1817	Juniper	15	—	152,4
4	Emma	1824	Whisker	15	1½	156,2
5	Bee's Wing	1833	Dr. Syntax	15	2	157,5
6	Crucifix	1837	Priam	15	3¾	162,0
7	Pocahontas	1837	Glencoe	14	3	149,9
8	Ghuznee	1838	Pantaloon	14	3	149,9
9	Miami	1844	Venison	15	1	154,9
10	Lady Evelyn	1846	Don John	15	1½	156,2
11	Blink Bonny	1854	Melbourne	15	2½	158,3
12	Imperieuse	1854	Orlando	15	3	160,0
13	Pulcherrima	1873	Beadsman	15	½	153,7
14	Pearlina	1875	Brown Bread	15	1	154,9
15	Perditta II.	1881	Hampton	15	2	157,5
16	Haselnus	1882	Flibustier	15	1½	156,2
17	Morganette	1881	Springfield	16	1	165,1
18	Vitarba	1884	Rosicrucian	15	1	154,9
19	Sappho	1886	Wisdom	15	1¼	155,5
20	Vision	1886	Flibustier	15	1¼	155,5
21	La Flêche	1889	St. Simon	16	—	162,6
22	Medora	1890	Bend Or	15	2	157,5
23	Festa	1893	St. Simon	15	2	157,5
24	Helm	1893	Morion	15	3¾	162,0
25	Victoria	1904	St. Simon	15	2½	158,3

When purchasing or judging Thoroughbred brood mares, one must tabulate their pedigree in the female line for about four to five generations in order to easily and rightly estimate them. As a contrast to Goos' tables, not only the classical winners, but all products of the female blood stream which have won races are noted, showing how often they have run and won. Of course, the classical winners are specially mentioned. Thereby one will often be surprised to find how few of the many offsprings in the respective female blood stream remain in the case of most mares. I give as an example of this the estimating table for the mare White Nun, formerly thus constructed. For want of space I have only gone back two generations. The type in bold letters means also ran or won as two-year-olds. Everything which had not won up to the sale of White Nun has been left out, except where the progeny of a non-winning mare has won; for example, Wingrave Lass, as dam of Windthorpe. The sires of White Nun, Lady Blanche, etc., stand above the respective mares.

Hermit	Thunderbolt	Vengeance
White Nun. **23. 4.**	Lady Blanche 27. 12.	Cordelia **15. 1.**
1882	1868	1862
	1874 Wingrave Lass by Wingrave 0. 0.	1870 Thunderer by Robin Hood **38. 4.**
	1883 Windthorpe by Tibtorpe **31. 5.**	1876 Goneril by Thunderbolt 0. 0.
	1880 Spectre by Speculum 9. 1.	1880 Duke of Albany **35. 3.**
	1883 Whitefriar by Hermit **18.** 6.	1883 Duchess of Albany **14.3.**

(Gratw. St. Goodw.)

(c) Age and Treatment of Covering Stallions.

I cannot recommend the use of stallions for covering purposes before their fourth year; firstly, because the stallions generally suffer in their development by reason of this early covering; and secondly, because also in Half-bred breeding I have never yet seen good foals produced by three-year-old stallions. In Thoroughbred breeding also, I do not know a case of a successful use of a three-year-old stallion. Only in American Trotter breeding I must mention the remarkable example of Hambletonian (10), born 1849, who produced as a two-year-old in 1852 Abdallah (15). Abdallah (15) became the foundation sire of the celebrated Crescens, born 1894, with a record of 2.02¼. The question, up to what age the stallion may be used, depends only how long he can cover and still fertilise. I have never yet observed at Trakehnen a diminution in the quality of the foals due to the great age of the stallion as long as he remained healthy and was not used too much. In Thoroughbred breeding, however, the power of transmission seems to have decreased lately from the 19th to the 20th year, as may be seen from a previously given table (page 87), especially if one compares them with the performances of 19-year-olds, which are not here mentioned, but which are very favourable. In Half-bred breeding statistics are so incomplete that one cannot arrive at any real conclusions. Many breeders in England contend that old stallions produce more stayers; further, old stallions and stallions which are much used produce generally more colts. When stallions are very much used, as sometimes happens in country studs, I have now and then observed that the foals become somewhat lighter, as for example, in Gudwallen with Halm and Harnisch, and in Trakehnen with Optimus. Fertility decreases easily if stallions are too much used in their youth, otherwise old stallions fertilise as long as they are healthy even often better than young stallions (as already Aristotle and Fugger have taught us). The often observed worse transmission, as well as worse fertilisation, on the part of young stallions, especially those who have run much and for long, is, in my opinion, caused by the fact that the transition from the course to the stud is too sudden, and therefore injurious to health. The sensible and good treatment of young covering stallions (especially at Eaton Hall, the Duke of Westminster's stud), has led in the following cases to good results in the first covering year :—

1. Doncaster—Bend Or—Ormonde and Kendal.
2. Ormonde—Orme, Llantony and Goldfinch.
3. Flying Fox—Ajax and Gouvernant.
4. Galtee More—Irish Lad.
5. St. Simon—Memoir, Semolina and St. Serf.
6. Persimmon—Sceptre and Cheers.
7. Flageolet—Rayon D'or.
8. Wild Dayrell—Buccaneer.
9. Orlando—Teddington.
10. Florizel—Diomed.
11. Highflyer—Rockingham.

The health of the covering stallions is, therefore, one of the most important problems of the breeder. Firstly, there must be a sensible transition from the condition of training to that of covering. Stallions which have been accustomed to rugs must be slowly broken off the habit, of course, in the warm season, and always with the proviso that the stable temperature in winter does not sink below 5° C., and is not generally less than 8° C. Furthermore, a horse in training is used to much work. The sudden stoppage of all work is therefore injurious to health. When, of course, quick work may be left out without injury, the young covering stallion ought to do sufficient slow work, to which also short canters belong. To sum up, the young covering stallions must do daily fully 2½ hours' exercise. As long as Old Chamant was in Beberbeck he did his canters daily up to his 20th year; but, of course, I do not wish to imply that every stallion should do cantering work up to that age. Here again the individualising breeder's eye must decide how much work would be beneficial to any single stallion. If, for example, such a full-blooded and phlegmatic stallion as Minting, when he commenced covering, had done his cantering work for the 2½ hours necessary daily, he would not have got founder, and he would very likely not have failed in his first year as a covering stallion, and would very probably have transmitted better according to his magnificent form as a racehorse and to his perfect exterior. England sins most in this respect, by often taking things too easily, I believe, and many excellent Thoroughbred stallions have perished early in consequence of having had too little exercise. Old Wollstein already speaks energetically against the insufficient exercise of covering stallions, and says finally: "If you make doctrines, make them so that you yourselves are not ashamed of them, and that you do not injure the animals. Ask the beast itself, and from it you will learn." If cantering does not seem any more necessary for the covering stallion, the best thing to recommend is to lead him in company with another stallion, and in summer to put him in a paddock with an adjoining box. It is very useful for the covering stallions to be able to see, in the box as well as in the paddock, their neighbouring stallions. Nothing is so conducive to make covering stallions vicious than complete isolation. For Half-bred stallions I consider it very useful to con-

tinue the training of four and five-year-olds for about four months after the covering season, in order to prevent premature ageing and fattening, to which the best and healthiest Half-bred stallions are mostly prone.

The quantity of food, as well as exercise, must be regulated to suit individual cases. During the covering season I recommend daily 10 to at the most 15 lbs. of oats (1 lb. of oats=about 1 litre) in four rations, and about 10 to 15 lbs. of meadow hay (not clover hay); twice weekly, wheat bran, about 2 litres, as a mash, with oats mixed for the evening food. Early in the spring, for about four weeks whilst casting their coats, daily about ½ lb. linseed ground or roasted (about a handful to each feed of oats). After the covering season in summer, about 6 to 10 lbs. of oats, and as long as it is available, green Lucerne, or green clover with Timothee. In the case of green food special attention must be paid to its being chopped twice daily and eaten fresh at once. During green food season leave out the wheat bran. Young Half-bred stallions which are still kept in training get, of course, more oats, just the same as horses in training. They must, however, get the green food just the same as the others, unless racing is intended. In the autumn, when green food is no longer available, give them, for about four weeks daily, about 6 to 8 litres fresh carrots finely chopped. Of course, a change from one ration to another must be gradual.

(d) The Stallions whilst Covering.

In my opinion, it is most advantageous that *one* attendant should lead the stallion when covering. If two attendants, one on each side, guide the stallion with a cavesson rein, they must both be well trained, sensible and attentive in order to avoid awkward or too sudden pulling or tightening of one or both cavessons when the stallion has to be taken or kept back. Not only is it easy for accidents to happen with two attendants, but a stallion gets vexed much easier, as the most important personal and friendly relation and agreement is only possible with one attendant. It is especially much better to have only one attendant leading when teaching young stallions. Besides the leading attendant and the man who holds the mare, there is only another attendant required to stand at the right side of the mare and give the necessary assistance. He must pull the mare's tail to one side before the stallion mounts, and when necessary help on the right thigh the stallion whilst he covers, whilst the leading attendant helps him on the left thigh. To guide the penis of the stallion into the vagina is the duty of the leading attendant, but only as far as is required, and with the view of gradually educating the stallion to do it finally himself. The old precept of leading the stallion once before the covering in a circle round the mare is very sensible. This action has the effect of quietening and educating the stallion, the mare does not become so easily frightened, and the covering is done quietly and in the place desired and prepared. Very likely this old precept was originally

based on the idea that the good-looking stallion would influence the mare in producing a fine foal. It is, of course, essential that there should be the greatest quietness during the covering, and that there should not be many people, and no dogs, etc., about. I would like to mention one thing more, viz., that mounting is facilitated if the mare stands with her fore-feet on higher ground. Of the about 200 stallions which I have seen taught to cover according to the above rules, I have never yet found one which did not learn it in one or two days, with one exception, when it took eight days. Finally, in all these things, old stud attendants have more experience, and in difficult cases always more practical remedies than I am in general able to propose. In order to prevent the possible transmission of infectious matter of abortion by the penis of the stallion, I recommend that same should be thoroughly washed immediately after covering with wadding soaked in a solution of chinosol 1 per 1,000, for which purpose the penis must be drawn out long with the hand. Of course, during this manipulation one cannot expect too much patience from the stallion at first, and must accustom him to it by degrees. I never yet found a stallion which did not get used to it in a very short time. To merely rinse the penis with an irrigator is not sufficient disinfection.

The best time for covering is about half an hour after the stallion has been exercised, viz., in East Prussia, in winter about 9 o'clock, and in summer about 7 o'clock in the morning, and if twice covered, in the afternoon at 3 or 5 o'clock. Stallions must not cover immediately after having had their oats; there must be at least an interval of one hour. When stallions first begin covering it is advisable to let them cover only three or four times per week. Later on, in the case of most stallions, it is most advantageous for most stallions to cover once daily without missing. A so-called rest day, *i.e.*, when no covering is done, results in most cases in the stallion making more effort than is necessary the day after, which does him more harm than the rest day has done him good. A rest day might be useful on the day following that in which the stallion has covered twice. Four-year-old stallions should never be expected to cover more than once a day in their first year of covering. Older stallions ought not to mount twice a day for more than two weeks together, as after that period it would do them harm. After several days with one mount per day, two mounts daily can be repeated for two consecutive weeks. Here again, however, individuality must be the deciding factor. In the cases of especially valuable chief covering stallions I would recommend never to let them mount twice daily for more than three to four days consecutively, and then for the same number of days once daily. The over-exertion of stallions by covering twice daily for several months together, which is frequently unavoidable in many country studs, not only causes an early infertility of the stallions, but, as already mentioned, their progeny becomes lighter. From their 20th year the productive capacity of most stallions gradually decreases, and for that reason valuable stallions which

are 20 years or older must only in exceptional cases (two to three times monthly) be allowed to cover twice in one day. Stallions are most liable to refuse to cover dark coloured mares, especially black mares. It is therefore advisable to have a light coloured mare, for preference a grey mare, to get the stallion ready, and at the last moment turn him on to the black mare; a trick which in most cases is successful.

Performances of Hambletonian (10) at the Stud.

In the Year	Age in Years	Number of Covered Mares	Foals Born Alive	Percentage of Foals	Amongst which are the following Celebrated Sons.
1851	2	4	3	75	Abdallah (15), Billy Denton (65)?
1852	3	17	13	76	
1853	4	101	78	77	Volunteer (55)
1854	5	88	62	70	Edward Everett (81)
1855	6	89	64	72	George Wilkes (519)
1856	7	87	64	74	Dexter Record: 2. 17¼!
1857	8	87	63	72	
1858	9	72	54	75	
1859	10	95	66	69	Robert Bonner (270)
1860	11	106	72	68	Bruno
1861	12	98	68	69	
1862	13	158	111	70	Administrator (357), Dictator (113), Happy Medium (400), Harold (413), Chester, Sentinel (280)
1863	14	150	92	61	Jay Gould (197), Prosper (907), Idol (44), Y. Bruno
1864	15	217	148	68	Knickerbocker (200), Messenger, Duroc (106), Rysdyk (658)
1865	16	193	128	66	Aberdeen (27), General Stanton (2545), Socrates (287), Strathmore (408), Small Hopes
1866	17	105	75	71	Banker (4114), Bismarck (67), Blackstone (72), Deucation (889), Florida (482), Bolton (76), Sweepstakes (298)
1867	18	72	42	58	Cuyler (100), Electioneer (125), Enfield (128), Masteriode (595), Drift (522), Waltham (687)
1868	19	not	given		
1869	20	22	18	82	
1870	21	22	16	73	Auditor (773)
1871	22	30	26	87	
1872	23	30	24	80	Arthurton (365), Artillery (750), Kisber
1873	24	31	20	65	Meredith (1367)
1874	25	32	24	75	Egbert (1136)
1875	26	24	2	8	
Total		1930	1333	69	

As example of the capabilities of a stallion in the case of reasonable management—as is found oftener in America than in England and Ireland—the above-mentioned Trotter, Hambletonian (10), born 5th May, 1849, by Abdallah I., is worthy of note. It may be especially noticed in the table on the preceding page that the percentage of fertilisation and the quality of transmission has not decreased after the 20th year in spite of very great use (15 years old 217 mares). Hambletonian died in March, 1876, when 27 years old, and left behind 150 sires, with 1,490 descendants, which had a record of 2.30 and better, as well as 80 brood mares, with 110 descendants, which had also a record of 2.30 and better.

Furthermore, the Thoroughbred stallion, Red Prince II., by Kendal, has, for example, covered as a 19-year-old in four and a half months in Trakehnen 74 mares in 88 servings, and fertilised 66 of same, *i.e.*, 89.2 per cent. Hereby it must be mentioned that Red Prince came to Trakehnen from Ireland only on the 8th January, during a temperature of 30° C., and the covering season finishes at the end of May.

(e) Age of Brood Mares.

The best age at which to cover mares is three years, except in cases where three-year-old Thoroughbred mares are still in training and have to run races, then it is better to put off the covering for another year. The same applies to Half-bred mares if they as three-year-olds are still subject to regular training, or as riding or carriage horses do so much work that they do not get fat and come too often in heat, in spite of good food. The best results as regards the number of foals and perhaps also as regards their quality are, as previous tables (pages 56—63) show, found on an average with mares which are covered and were in foal as three-year-olds. This applies to Thoroughbred as well as to Half-bred breeding. I only know one mare in Germany which has dropped 20 living foals, namely, B Flat, which was covered with success as a three-year-old. According to experiences at Trakehnen, mares which produce the first foal in their fifth year, or later, remain in the following year barren much oftener than mares which have been successfully covered as three-year-olds. Besides, the latter are, almost without exception, better nurses. Wollstein thinks that mares which bear their first foal as four-year-olds have the following advantages when compared with mares which have been covered later in life :—

1. The births are easier.
2. Mares are more fertile and have more milk.
3. The foals are bigger and stronger.

The most prominent products of mares, on an average, are produced between their eighth and thirteenth year, as can be easily seen for Thoroughbred breeding from the Goos' tables. Goos says in the preface of his celebrated tables that the winners of the five classical races in England are distributed as follows :—

3 to 7-year-old dams 17 per cent.	of classical winners.
8 to 13 ,, ,, 55 ,,	
14 to 18 ,, ,, 21 ,,	
19 to 25 ,, ,, 7 ,,	

As experience at Trakehnen shows, 8 to 13 years of age is also the best and most fertile time for Half-breds. In Half-breds, however, the brood mares, up to their 7th year inclusive—as opposed to Thoroughbreds—seem to be much more fertile than between the age of 14 and 18. 20-year-old brood mares have up to now produced three Royal Stud stallions only, those older than 20 none at all.

Miscarriage or barrenness of mares in the first three to five years of their being made brood mares is less dangerous than if occurring in later years. Of course, this is always bad. Brood mares at the age in which, as above said, the best products are expected from them, *i.e.*, 10-year-old and over, have more seldom the power to overcome these unfavourable derangements of their breeding career than younger mares. Prominent products of Half-bred mares over 20 years of age are not known to me, whilst, as shown in the previous tables (pages 65—78), in the breeding of Thoroughbreds also, 24-year-old and older brood mares have produced classical winners or other prominent progeny.

(f) Twins.

Mares which have produced twins, dead or living, are in most cases, however undesirable any single case may be, considered specially valuable brood mares, from which prominent progeny may be expected. Unfortunately, twin births frequently recur, as for example, with the Oaks winner Bronce, four times; with Legend born 1825 by Merlin, and granddaughter of the celebrated Prunella, three times consecutively; and with Fairy Ring born 1878 by Macaroni, also three times consecutively. This quality is often hereditary, and there are many examples of it in Thoroughbred breeding as well as in Half-bred breeding.

In the last twenty-five years, from 1874 to 1898 inclusive, 33 Royal Stud stallions have been born in Trakehnen, of which the following 11 stallions are derived from dams which also had twins :—

1. Tunnel, born 1874 by The Duke of Edinburgh and Tutti.
2. Paladin, born 1874 by Adonis and Palme.
3. Discant, born 1877 by Flügel and Diana.
4. Venezuela, born 1878 by Hector and Viereck.
5. Elfenbein, born 1879 by Marsworth and Ellis.
6. Passvan, born 1881 by Flügel and Palme.
7. Granicus, born 1887 by Kingdom and Gradlitz.
8. Jenissei, born 1888 by Venezuela and Jemba.
9. Hydriot, born 1895 by Fürstenberg and Hydra.
10. Morgenstrahl, born 1896 by Blue Blood and Moba.
11. Justizminister, born 1898 by Boulevard and Justicia.

There can as yet be no final judgment about the later born stallions, as their dams are still alive and are too young. Of the 1,297 brood mares mentioned in the Second Volume of the Trakehnen Stud Book, only 136 have up to now produced twins; nine mares twice, and two mares three times. In the First Volume of the Beberbeck Stud Book, 342 brood mares are mentioned, of which only 13 bore twins; amongst these 13 being the celebrated Optima, dam of the best stallion which Beberbeck has produced, namely, Optimus, who was for eight years up to his death used as a Royal Stud stallion in Trakehnen. Perhaps the best son of Optimus, born in Beberbeck, was Cardinal, born 1895 by Optimus and Cedar, who commenced with twins. Only one brood mare (Lucca) has produced twins in Beberbeck twice. In one case both lived, of which one (Lollo) became a brood mare and also produced twins. Ajax, a twin born in Beberbeck 1800 by Dreadnought and Augusta, became stallion in Neustadt. As already mentioned, only one mare in Germany has produced 20 living foals, amongst them the Derby winner Paul, and that was the Thoroughbred mare B Flat (born 1864 by Orlando and Torment), who herself was a twin.

The number of twin births, according to observations made at Trakehnen in the last twelve years, varies very much—from $\frac{1}{3}$ per cent. to 3 per cent., average about $1\frac{1}{2}$ per cent. of the mares in foal, and is higher in those years in which fertilisation has been favourable. It is worthy of note that in human twins also the average is just over 1 per cent.

In the General Stud Book, in the first sixteen volumes, 1,085 mares are mentioned which have produced twins. Of these 413 mares are mentioned in Goos' tables (3rd edition), a sure sign that they are amongst the most prominent for breeding purposes; an exceedingly good state of affairs. More than 80 prominent foundation mares in the Goos' tables are dams which have produced twins. From the following list of mares which have produced twins and also performed well in breeding, it can be seen that in England 13 Derby winners, 15 Oaks winners, 9 St. Leger winners, 10 Two Thousand Guineas winners, and 10 One Thousand Guineas winners are offsprings of mares which have produced twins.

A Few Thoroughbred Brood Mares in England which have Produced Twins.

No.	Name and Pedigree	Born	Family and Progeny
1	Horatia by Blank — Flying Childers	1758	Famous foundation mare of Fam. 6 Grand-dam of Diomed D. and Y. Eclipse D.
2	Letitia by Highflyer — Matchem	1783	Foundation mare of Fam. 46
3	Nimble by Florizel and Bantipole	1784	17 foals Niké O. Foundation mare of Fam. 32

No.	Name and Pedigree	Born	Family and Progeny
4	Maid of Ely by Tandem — Herod	1785	13 foals Foundation mare of Fam. 45
5	Palmflower by Weazle and Columba Twice twins	1787	Cockfighter L. Fam. 2
6	Mare by Highflyer — Goldfinder	1788	12 foals Pensioneer 1795 by Dunganon Agnes 1805 by Shuttle Fam. 26
7	Mare by Trentham and Cytherea	1789	Pantina (dam of Blücher D.) Fam. 4
8	Y. Giantess by Diomed and Giantess	1790	Sorcerer Eleanor D. O. Julia (dam of Phantom D.) Cressida (dam of Antar 2. and Priam D.) Mare by Walton (dam of Nicolo 2. and Langar) Fam. 6
9	Rally by Trumpator and Fancy	1790	Famous foundation mare of Fam. 6a
10	Woodbine by Woodpecker and Puzzle (lived to 32 years old) Twice twins Half-sister to Hornby Lass	1791	Music O. Minuet O. Fam. 1 a
11	Mare by Pot8os and Editha	1794	12 foals Famous foundation mare of Fam. 3e
12	Mare by Precipitate and Lady Harriet	1795	Wizard 2. Fam. 12 a
13	Hornby Lass by Buzzard and Puzzle (lived to 32 years old) Half-sister to Woodbine	1796	12 foals Morel O. Fam. 1 a
14	Lady Jane by Sir Peter and Paulina Own sister to Hermione O.	1796	Briseis O. Miss Tooley (grand-dam of Harkaway Gep. 2 ×) Fam. 2
15	Mare by Precipitate and Y. Tiffany Twice twins	1797	Bourbon 1811 by Sorcerer Mare by Sorcerer (dam of Jack Spigot L.) Fam. 5 a

No.	Name and Pedigree	Born	Family and Progeny
16	Violante by John Bull — Highflyer	1802	Famous foundation mare of Fam. 3 a Grand-dam by Decoy
17	Bronce O. by Buzzard — Alexander Twice twins Own sister to Castrel, Selim and Rubens	1803	Mulatto 1811 by Sorcerer Busto 1812 by Clinker and 2 good foundation mares in Fam. 2 d
18	Henrietta by Sir Solomon — Woodpecker	1807	Tarrare L. Fair Charlotte Fam. 6
19	Lady Grey by Stamford — Bordeaux	1806	Gustavus D. Fam. 7
20	Mare by Walton and Y. Giantess, who also had twins	1808	Nicolo 2. (twins) Langar Fam. 6
21	Mare by Shuttle — Drone	1809	13 foals. Famous foundation mare in Fam. 13
22	Scheherazade by Selim and (21-year-old) Gipsy	1810	Foundation mare in Fam. 10 b
23	Selima by Selim and a Mare by Pot8os, who also had twins	1810	Famous foundation mare in Fam. 3 e
24	Miss Craigie by Orville and Marchioness Twice twins	1811	Birmingham L. Foundation mare of Fam. 34
25	Sunflower by Castrel — Alexander	1813	Foundation mare in Fam. 4 a
26	Mare by Clinker and Bronce O., who herself had twins four times	1816	Famous foundation mare in Fam. 2 d
27	Mare by Catton and Altisidora L.	1823	Ralph. 2. Cm. Acp. Fam. 11
28	Sylph by Spectre and Fanny Legh	1824	Lugwardine Newcourt Lady Lift (dam of Consul FD., Mazarin, Le Marechal) Fam. 35
29	Turquoise O. by Selim and Pope Joan	1825	Jericho Fam. 1 b
30	Variation O. by Bustard and Johanna Southcote	1827	Pompey Elphine, famous foundation mare in Fam. 9 b and dam of Warlock L., Phantom, etc.

No.	Name and Pedigree	Born	Family and Progeny
31	Zarina by Morisco and Ina	1827	The Prime Warden The Cur Cs. Fam. 17
32	Progress by Langar — Blacklock	1833	Attila D. Fam. 15
33	Miss Kitty Cockle by Cadland and Maid of Mansfield Twins twice	1834	Truth Cm. Fam. 11 b
34	Virginia by Rowton and Pucelle	1835	Virago 1. Gep. Dep. and Sacrifice, grand-dam of Devotion, famous foundation mare in Fam. 4 a
35	Black Bess by Camel — Scud	1837	Hernandez 2. Bataglia, good foundation mare in Fam. 6 a
36	Crucifix 2. 1. O. by Priam and Octaviana	1837	Surplice D. L. Cowl Chalice (grand-dam of Placida O.) Fam. 2 c
37	Monstrosity by Plenipotentiary and Puce	1838	The Ugly Buck 2. Foundation mare in Fam. 4 a
38	Moonbeam by Tomboy and Lunatic	1838	Manganese 1. Fam. 4 c (grand-dam of Apology 1.O.L., Wenlock L., Kisber D., Schwindler U. XD.)
39	Peggy by Muley Moloch and Fanny	1840	15 foals, amongst others Musjid D. Fam. 6
40	Emerald by Defence and Emiliana	1841	Mentmore Lass 1. Fam. 3 b (dam of Hannah 1. O. L. and grand-dam of Favonius D.) King of Diamonds
41	The Landgravine by Elis and The Margravine	1841	Landgrave Cm. Sittingbourne Maid of Kent Fam. 5 d
42	The Princess O. by Slane — Phantom	1841	The Great Unknown Fam. 1 c
43	Bridle by The Saddler and Monoeda	1844	Habena 1. Lady Sophie, famous foundation mare in Fam. 9
44	Ellen Horne by Redshank and Delhi	1844	Paradigm (dam of Lord Lyon 2. D. L., Achievement 1. L.) Rouge Rose (dam of Bend Or D.) Fam. 1 d

No.	Name and Pedigree	Born	Family and Progeny
45	Gaiety by Touchstone and Cast-steel	1844	Gamester L. Gadabout (dam of Scamander) Doncaster Fam. 19
46	Mare by Hampton — Muley Moloch	1844	Gaspard Odd Trick Cm. Mad. Stodare Fam. 2 a
47	Mainbrace by Sheet Anchor — Bay Middleton	1844	Fisherman Acp. 2 × The Peer Fam. 11
48	Prairie Bird by Touchstone and Zillah	1844	Famous foundation mare in Fam. 1 b England's Beauty Bonny Blink Vitula
49	Hybla by The Provost and Otisina	1846	Mincemeat O. Kettledrum D. Fam. 3 d
50	Legerdemain Cs. by Pantaloon and Decoy Own sister to Sleight of Hand. Van Amburg and Phryne	1846	Toxophilite Sagitta 1. Fair Star Fam. 3 a
51	Mrs. Hobson by Bay Middleton and Vitula	1846	Orestes Pylades Janus Fam. 21
52	Bassishaw by Prime Warden and Miss Whinnie, whose grand-dam by Shuttle had also twins	1847	Ben Webster Isoline Gcp. (dam of Isola Bella, who also had twins, St. Cristophe GG., Braconnier) Fam. 19 a
53	Figtree by Envoy and Azora	1848	Palm (dam of Vauban 2. Gcp. and Duke of Parma Cs.) Siberia 1. (dam of Cecilia 1., who also had twins) Westminster Cm. Fam. 2
54	Frolic by Touchstone — The Saddler	1848	Frolicsome (dam of Frontin FD. GP.) Lady Sophia Fam. 24

No.	Name and Pedigree	Born	Family and Progeny
55	Indiana by Muley Moloch and Pocahontas	1848	Kentucky Humming Bird Fam. 3 c
56	Mare by The Cure and Elphine	1849	The Wizard 2. Fam. 9 b
57	Mentmore Lass 1 by Melbourne and Emerald	1850	Hannah 1. O. L. Zephyr (dam of Favonius D.) Fam. 3 b
58	Torment by Alarm-Glencoe	1850	Tormentor O. B. Flat (twins and had 20 foals) Laura (Sire Petrarch L.) Fam. 10 b
59	Village Lass by Pyrrhus 1. and Maid of Hart	1851	Rustic Countryman Bittern Fam. 2 e
60	Chalice by Orlando and Crucifix 2. 1. O., who also had twins	1852	Pietas (dam of Placida O.) Fam. 2 c
61	Homily by Surplice and Blue Devils	1852	Good foundation mare in Fam. 27
62	Rambling Katie by Melbourne and Phryne	1852	Queen of the Gypsies (dam of Paul Jones) Chambermaid (dam of Brocken NL. Hr. BB.) Fam. 3 a
63	The Heiress (firstling) by Birdcatcher and Inheritress (Firstling, ran and won up to its 10th year)	1853	Vanessa (dam of Das Veilchen, Wagehals, etc.) Jeannie (dam of Whim 11Z.) Fam. 4
64	Verona by Orlando and Jodine	1854	Thurio GP. Lucetta Cm. Villafranca Fam. 2
65	Souvenir by Chanticleer and Birthday	1856	Strathcona Fair Unknown (who also had twins) Fam. 11
66	Heroine of Lucknow by Nutwith and Pocahontas	1856	Famous foundation mare in Fam. 3 c

No.	Name and Pedigree	Born	Family and Progeny
67	Diana by Hartneitstein and Iris	1858	Miraflora Hn. Neudan (dam of Tartar OD. U. ND.) Wild Huntsman Fam. 8 c
68	Feu de Joie O. by Longbow and Jeu d'Esprit	1859	Alumette Hollandaise (dam of Solange FO.) Fam. 7 a
69	Lady Alice Hawthorn by Newminster and Lady Hawthorn	1859	Famous foundation mare in Fam. 4 d
70	Mrs. Wood by Y. Melbourne and Physalis	1859	Little Sister (dam of Thunderstorm, Krakatoa FL. Cd., Fousi Yama Cd.) Fam. 8 c
71	Pompadour by Stockwell and Marchioness O.	1859	Advance (dam of Alexander SD., Cäsar ND., Gallus) Fam. 2 f
72	Queen Bertha O. by Kingston and Flax	1860	Spinaway 1. O. Wheel of Fortune 1. O. Grandmaster Queen's Messenger Gertrude Fam. 1 c
73	Barchettina by Pelion and Cymba O.	1860	The Abbot 1877 by Hermit Marden 1879 by Hermit Canoe 1881 by Hermit Fam. 2
74	Battaglia by Rataplan and Espoir	1861	Lord Gough (the best son of Gladiateur) Fam. 12
75	Breeze by King Tom and Mentmore Lass 1, who also had twins	1861	Foundation mare in Fam. 3 b
76	No Name by Teddington and Queen of Beauty	1861	Nameless (dam of Geheimniss O.) Fam. 14
77	Rigolboche by Rataplan—Gardham	1861	Cremorne D. GP. Acp. Earl of Dartrey Mabille Fam. 2 d

No.	Name and Pedigree	Born	Family and Progeny
78	Mare by Y. Melbourne and Brown Bess	1861	Quiver (dam of Memoir O. L. and La Flèche 1. O. L.) Fam. 3
79	Wild Agnes by Wild Dayrell and Little Agnes	1862	Little Agnes FO. FL. Brown Agnes Fair Agnes Wild Tommy Fam. 16
80	Bounceaway by Zuyder Zee and Press Forward	1864	New Holland Gcp. Tripaway Fam. 22 a
81	Parma by Parmesan and Archeress	1864	Isabel (dam of St. Frusquin 2. Ec.) Biserta (dam of Goletta) Fam. 22 a
82	Lady Coventry by Thormanby and Lady Roden	1865	Yorkshire Bride Farnese Lady Golightly Lady of Mercia (grand-dam of Ragotsky FD. GP.) Fam. 27
83	Pearlfeather by Newminster and Bess Lyon	1865	Paraibl (dam of St. Wolfgang, Prado Tr. NZ., Lilinokalani OO.) Fam. 4 b
84	Thrift by Stockwell and Braxey	1865	Tristan Acp. Hrd. 3 × Fam. 10
85	Adelaide by Y. Melbourne — Teddington	1866	Peregrine 2. Queen Adelaide St. Alvere St. Mvere St. Mary (dam of La Sagesse O.) Fam. 9
86	Poinsettia by Y. Melbourne and Lady Hawthorn	1866	Famous foundation mare in Fam. 4 d
87	Wheatear by Y. Melbourne and Swallow	1867	Harvester D. Skylark Fam. 15
88	Isola Bella by Stockwell and Isoline	1868	Isonomy Cm. Acp. 2 × Gcp. Dcp. Fernandez Fam. 19 a

No.	Name and Pedigree	Born	Family and Progeny
89	Cicely Hacket by Le Marechal and Meg O'Marley, who had also twins as well as her dam	1869	Hackness Cm. Fam. 7
90	Light Drum by Rataplan and Trinket	1870	Little Duck FD. GP. Lapin Cd. Fam. 13
91	Enigma by The Rake and The Sphynx	1872	Florence BB. Cm. Tact (dam of Amiable 1. O. and Manners) Gravity (dam of William III.) Fam. 2 a
92	Spinaway 1. O. by Macaroni and Queen Bertha O., who had also twins	1872	Busybody 1. O. Arcadian Waltz Fam. 1 c
93	Bonnie Agnes by Blair Athol and Little Agnes	1875	Bonny Jean O. Agnostic Fam. 16
94	Hermione by Y. Melbourne and La Belle Helene	1875	Perditta II. (dam of Florizel II. Gcp., Persimmon D. L., Diamond Jubilee D. L.) Bride of Netherby Fam. 7
95	Thistle by Scottish Chief and The Flower Safety	1875	Common 2. D. L. Goldfinch Throstle L. Fam. 4 e
96	Lucetta Cm. by Tibthorpe and Verona, who also had twins	1876	Silver Gold Acp. Speed Luciana Fam. 2
97	Wheel of Fortune 1. O. by Adventurer and Queen Bertha Three times twins	1876	Oberon Fam. 1 c
98	Atalanta by Galopin and Feronia	1878	Ayrshire 2. D. Ec. Melanion Troon Fam. 8 a

No.	Name and Pedigree	Born	Family and Progeny
99	Sanda by Wenlock and Sandal	1878	Sainfoin D. Golden Garter Sierra, Black Sand Cs. Fam. 2 b
100	St. Marguerite 1. by Hermit and Devotion	1879	Seabreeze O. L. Lc. Valauris Le Var PWst. Roquebrune (dam of Rock Sand 2. D.L.) Fam. 4 a
101	Matilda by Beauclerc — Cathedral	1880	Nunthorpe Kp. Queen's Birthday Dep. Fam. 11 a
102	Match Girl by Plebeian and Fusee	1882	Matchbox Matchmaker Fam. 22 a
103	Virginia Shore by John Davis and Distant Shore	1884	Whittier E. Lady Minting Fam. 9 a
104	Lady Loverule by Muncaster and Nellie	1888	St. Amant D. 2. Fam. 14 a
105	Ornament by Bend Or and Lily Agnes	1887	Labrador Collar Hrd. Sceptre O. L. 2. 1. Fam. 16
106	Mother Siegel by Friar Balsam—Galopin	1897	Minoru 2 D. Fam. 5.

(g) Firstlings.

If we look more closely into the Stud Books, we find amongst the firstlings of brood mares more good animals than was generally supposed, owing to observations in studs where the brood mares were very poorly fed. The firstlings of brood mares at Trakehnen formerly were seldom good when poor food was given to the brood mares, especially before 1870. In Half-bred as well as Thoroughbred breeding, it is a remarkable fact that part of the best progeny were firstlings, but only in those studs where the brood mares got good food and plenty of it. In Beberbeck we can mention as firstlings the two Royal Stud stallions, Optimus, born 1880 by Odoardo and Optima, and Jubelgreis, born 1893 by Lamberg and Julie. Since the existence of Beberbeck as a Royal chief stud, we have possibly produced no better Royal Stud stallions than the two named firstlings. In the last fifty years, of 78 Royal Stud stallions produced there, the following 14 were firstlings :—

1. Norton, born 1854 by Stilton and Novello.
2. Fritter, born 1856 by Nobelmann and Faucette.
3. Grezano, born 1857 by Stilton and Giralda.
4. Eckstein, born 1870 by Venerato and Echo.
5. Fürstenberg, born 1878 by Ambos and Fulda.
6. Venezuela, born 1878 by Hektor and Viereck.
7. Elwin, born 1887 by Passvan and Emilia.
8. Elton, born 1888 by Duke of Edinburgh and Elpis.
9. Versuch, born 1890 by Anarch and Vestitur.
10. Ethelwold, born 1893 by Euphony and Etruskerin.
11. Amtsvorsteher, born 1899 by Fanfarro and Anisette.
12. Hoffnungsstrahl, born 1900 by Piper and Hoffnung (covered as a 3-year-old).
13. Fischerknabe, born 1901 by Obelisk and Fischerin.
14. Panzer, born 1902 by Greif and Panzerkette.

In the same period the dams of the following 19 Royal Stud stallions were firstlings:—1 Antenor, 2 Elfenbein, 3 Ethelwold, 4 Fischerknabe, 5 Flügel, 6 Fürstenberg, 7 Granicus, 8 Grezano, 9 Hirtenknabe, 10 Hoffnungsstrahl, 11 Insurgent, 12 Juli (out of a 3-year-old covered mare), 13 Justizminister, 14 Lauer, 15 Malteser, 16 Nisos, 17 Orcus, 18 Pless, 19 Tunnel (out of a 3-year-old covered mare).

In Thoroughbred breeding the following are the firstlings which are noted as classical race winners:—

1. Derby Winners.

1. Spread Eagle, born 1792 by Volunteer — Highflyer.
2. Daniel O'Rourke, born 1849 by Birdcatcher and Springy Jack.
3. Wild Dayrell, born 1852 by Ion and Ellen Middleton.
4. Favonius, born 1868 by Parmesan and Zephyr.

2. St. Leger Winners.

1. Tommy, born 1776 by Wildair—Syphon (covered as a 3-year-old).
2. Phönomenon, born 1780 by Herod and Frenzy.
3. Paragon, born 1783 by Paymaster and Calash.
4. Ashton, born 1806 by Walnut and Miss Haworth (covered as a 3-year-old).
5. Otterington, born 1809 by Golumpus — Expectation (covered as a 3-year-old).
6. Filho da Puta, born 1812 by Haphazard and Mirs. Barnet.
7. Touchstone, born 1831 by Camel and Banter.
8. The Baron, born 1842 by Birdcatcher and Echidna (covered as a 3-year-old).
9. Wool Winder, born 1904 by Martagon and St. Windeline.

2,000 Guineas Winners.

1. The Ugly Buck, born 1811 by Venison and Monstrosity (covered as a 3-year-old).
2. Vedette, born 1859 by Voltigeur and Mirs. Ridgway.
3. Surefoot, born 1887 by Wisdom — Galopin.

Oaks Winners.

1. Bridget, born 1776 by Herod and Jemima.
2. Tetotum, born 1777 by Matchem (28-year-old) and Lady Bolingbroke (10-year-old).
3. Sorcery, born 1808 by Sorcerer and Cobbea.
4. Poison, born 1840 by Plenipotentiary and Arsenic.
5. Mincemeat, born 1851 by Sweetmeat and Hybla.

1,000 Guineas Winners.

1. Mare, born 1812 by Selim — Cesario?
2. Arab, born 1824 by Woful and Zeal.

The following are to be mentioned as firstlings which have won other important races or which have otherwise become famous:—

A. Stallions.

1. Y. Merlin	1757 by Merlin and Molly Long Legs.
2. Gimcrack	1760 by Cripple and Miss Elliot (covered as a 2 or 3-year-old).
3. Paymaster	1766 by Blank and Snapdragon.
4. Trentham	1766 by Sweepstakes and Miss South.
5. Conductor	1767 by Matchem — Snap.
6. Mark Anthony	1767 by Spectator and Rachel (covered as a 3-year-old).
7. Pantaloon	1767 by Matchem and Curiosity.
8. Pyrrhus	1767 by Sprightly — Snip.
9. Telemachus	1770 by Herod — Skim.
10. Pot8os	1773 by Eclipse and Sportsmistress.
11. Joe Andrews	1778 by Eclipse and Amaranda.
12. Dungannon	1780 by Eclipse and Aspasia.
13. Rockingham	1781 by Highflyer and Purity.
14. Fidget	1783 by Florizel — Matchem.
15. Grey Diomed	1785 by Diomed and Grey Dorimant (covered as a 3-year-old).
16. Bustard	1789 by Woodpecker and Matron (covered as a 3-year-old).
17. Little John	1789 by Dungannon and Fairy.

18. Oberon 1790 by Highflyer and Queen Mab.
19. Sorcerer 1796 by Trumpator and Y. Giantess.
20. Catton 1809 by Golumpus and Lucy Gray.
21. Blackamoor 1811 by Stamford — Sorcerer.
22. Doctor Syntax 1811 by Paynator — Beningbrough.
23. Scrapall 1812 by Granicus — Young Whiskey (covered as a 3-year-old).
24. Sultan 1816 by Selim and Bacchante (covered as a 6-year-old).
25. Young Phantom 1822 by Phantom and Emmeline.
26. Royal Oak 1823 by Catton — Smolensko.
27. Robin Hood 1824 by Blacklock and Marion.
28. Sir Hercules 1826 by Whalebone and Peri (covered as a 3-year-old).
29. Taurus 1826 by Phantom or Morisco and Katherine.
30. Liverpool 1828 by Tramp — Whisker.
31. Alba 1831 by Nigel and Therese.
32. Heron 1833 by Bustard — Orville.
33. Melbourne 1834 by Humphrey Clinker — Cervantes.
34. Drone 1835 by Pantaloon and Decoy.
35. Jon 1835 by Cain and Margaret (covered as a 3-year-old).
36. The Provost 1836 by The Saddler and Rebecca.
37. Robert de Gorham 1839 by Sir Hercules and Duvernay.
38. The Cure 1841 by Physician and Morsel.
39. The Libel 1842 by Pantaloon and Pasquinade (covered as a 2-year-old).
40. The Great Unknown 1845 by Voltaire and The Princess.
41. Elthiron 1846 by Pantaloon and Phryne.
42. Newport 1846 by Epirus — Zimmermann (covered as a 2-year-old).
43. Kingston 1849 by Venison and Queen Anne.
44. Orestes 1850 by Orlando and Mrs. Hobson.
45. Arthur Wellesley 1851 by Melbourne and Lady Barbara.
46. Fandango 1852 by Barnton and Castagnette.
47. Tournament 1854 by Touchstone and Happy Queen (covered as an 8-year-old).
48. Pizarro 1855 by Bloomsbury and Marina.
49. Newcastle 1856 by Newminster and Mary Aislabie.
50. Vanquisher 1857 by Voltigeur and Eglantine.
51. Mandrake 1864 by Weatherbit and Mandragora.
52. Paul Jones 1865 by Buccaneer and Queen of the Gypsies.
53. Hampton 1872 by Lord Clifden and Lady Langden (covered as a 3-year-old).

54. Perplexe 1872 by Vermouth and Péripétie.
55. Bendigo 1880 by Ben Battle and Hasty Girl.
56. Le Nord 1887 by Tristan and La Noce (covered as a 3-year-old).
57. Espoir 1889 by Barcaldine and Bel Esperanza.

B. Mares.

1. Tuting's Polly 1756 by Black and All Black and Fanny.
2. Virago 1764 by Snap — Regulus.
3. Flora 1768 by Squirrel and Angelica.
4. Frenzy 1774 by Eclipse — Engineer.
5. Y. Camilla 1787 by Woodpecker and Camilla (covered as an 8-year-old).
6. Virgin 1801 by Sir Peter — Pot8os.
7. Maniac 1806 by Shuttle and Anticipation (covered as a 3-year-old).
8. Katherina 1817 by Woful and Landscape O. (covered as a 3-year-old).
9. Mermaid 1829 by Whalebone and Miss Emma.
10. Marpessa 1830 by Muley and Clare.
11. Pocahontas 1837 by Glencoe and Marpessa.
12. Monstrosity (Covered as a 2-year-old, dam of Ugly Buck 2.) 1838 by Plenipotentiary and Puce (covered as a 3-year-old).
13. Pantalonade 1839 by Pantaloon and Festival (covered as a 2-year-old).
14. Inheritress 1840 by The Saddler and Executrix (covered as a 3-year-old).
15. Eulogy 1843 by Euclid and Martha Lynn.
16. Queen Mary 1843 by Gladiator — Plenipotentiary (covered as a 2-year-old).
17. Honey Dear 1844 by Plenipotentiary and My Dear (covered as a 2-year-old).
18. Haricot 1847 by Mango or Lanercost and Queen Mary (covered as a 3-year-old).
19. Vesuvienne 1847 by Gladiator and Venus.
20. Little Agnes 1856 by The Cure and Miss Agnes.
21. Lady Alice Hawthorn 1859 by Newminster and Lady Hawthorn.
22. Budagyöngye 1882 by Buccaneer and Kincsem.

(h) The Treatment of Brood Mares.

It is, as a matter of course, essential that brood mares outside the grazing time should take gentle exercise for about one and a half hours daily up to the day of foaling, and about ten to fifteen days after the foaling, along with the foal, commencing with a quarter of an hour, till finally they do one hour. This is just as necessary as is in spring the gradual transition to grazing.

Like many other things in horse breeding, the food rations of the brood mares should vary according to the characters of the mares, and according to the soil on which the stud stands and the food grows. I now give the rations as approved of in East Prussia. After the grazing time brood mares in foal are given in three rations 6 lbs. of oats and about 15 lbs. of hay; barren mares 4 lbs. of oats and about 12 lbs. of hay. Supposing that oats and hay are of the very best quality, and that there is an ample spread of healthy rye or summer straw, I consider that a larger ration, especially of oats, is only necessary in a few exceptional cases. To these exceptional cases belong, for example, mares covered as three-year-olds and having become pregnant, also Thoroughbred mares in foal for the first time, and some mares —mostly older and barren ones—which feed with difficulty, to whom an additional 3 to 5 lbs. of oats and the same quantity of hay may be given. Good Lucerne or Sainfoin hay is, of course, by far the best, and particularly to be recommended for Thoroughbred breeding, while for Half-bred breeding clover hay is to be recommended, together with meadow hay, in order to produce stronger bones. In many parts, as for example, in East Prussia, wheat straw, especially new, is not suitable for brood mares, as colic and abortion are easily caused thereby. After grazing time, it is recommendable to add to the oats twice weekly 2 to 3 litres of wheat bran for the evening meal in the same manner as it is given to stallions. The last two to three weeks before foaling it is advisable to give this additional wheat bran three times weekly, or even daily, as many breeders do. In the spring, at the beginning of grazing, wheat bran is left out. To give extra food to the brood mares immediately after foaling is not advisable, because the after-pains are thus unnecessarily increased. In the case of the mare foaling shortly before her feeding time, it is advisable to reduce this first feeding somewhat. In the case when the mares are not in boxes, but are together with several others in loose boxes, they should be separated at once after giving birth, and remain with their foals alone for about eight to fourteen days. About eight days after birth suckling brood mares must have about 2 to 3 lbs. of oats and 5 lbs. of hay more, *i.e.*, 8 to 9 lbs. of oats and 20 lbs. of hay. Wheat bran three times weekly, or even daily, is given up to grazing time. I recommend that young Thoroughbred brood mares and four-year-old mares should be given, after foaling, 12 lbs. of oats, but no more. The foal of a Thoroughbred mare (Noran, a very good eater) to whom I gave before foaling 12 to 16 lbs. of oats and after foaling 18 lbs. of oats, sickened soon after of bone

disease (*Osteoporosis chronica universalis*) and died consequently when five years of age (Napoleon, the skeleton is in the Trakehnen Museum). I recommend that bad feeding mares should be given an additional 3 lbs. of ground barley. In the case of the above-mentioned oat rations, it is taken for granted that the suckling foals, as stated below, get the oats extra. Salt and chalk must always be in the crib. Pregnant mares must never be given carrots. Artificial feeding stuffs, chemical preparations, phosphoric acid calcium, etc., are not to be recommended. Opening pills seem to be dispensable. I have never used them, and never known the need of them.

During grazing time suckling mares must get 6 lbs. of oats in two rations, barren and weaned mares 2 lbs. of oats (early in the morning). If the grazing is not rich, especially in late autumn, an additional 3 lbs. of hay in the morning, and if that is not sufficient in the evening also, is necessary. To keep brood mares, even in the summer when grass is plentiful and good, without oats, has proved to be a failure in Trakehnen. Also, night grazings, which were found to be good at Beberbeck, proved to be bad at Trakehnen. These and many other things must be managed according to the different experiences obtained locally. The more open air exercise the breeding material can be allowed without bad consequences, the more suitable is the soil for breeding. Grazing on frosty grass is to be avoided. Young clover must only be grazed when in bloom.

(i) Covering of Brood Mares.

The question in which month mares should be covered must be answered according to local conditions. In England and America late born foals have excelled. West Australian and Blue Gown, for example, were born in June. Many contend that English early born foals are specially inclined to roaring. Prince Charlie, born in January, is a well-known example of this. John Porter says "he never knew a roarer born in May." The question has therefore been raised in England, to calculate the age from the 1st of March instead of from the 1st of January. In East Prussia and in Courland, however, early born foals are stronger and healthier than late born ones. The age of Half-bred foals in East Prussia is now reckoned from the 1st of November. The reason is as follows: In East Prussia the grazing continues till about the middle of October, after which follows the so-called stabling of the brood mares, and winter life commences with 1½ hours' exercise on the track and 22½ hours standing in the stable. Now also come the short days, so that in December mares must stand about 16 hours out of the 24 in a dark room. Feeding is also less favourable, exercise less complete, air, sun and wind, with all their benefits, very limited. It can be easily understood that the foal in the womb also suffers from these unfavourable influences, especially as these unfavourable changes coincide with the last and most important time of its fœtal life. The shorter, therefore, this unfavourable time is from

the stabling to the foaling, the better for the foal. The disadvantage of early born foals in East Prussia coming to grass only when weaned may be modified by regular daily and ample exercise of the sucklings with their dams on special tracks, and is less great than keeping pregnant mares for months in the stable. Moreover, early born foals are greatly favoured by passing one of the most important and most dangerous times of their lives, namely, weaning, during the most favourable time of the year, *i.e.*, the time of the first and most nourishing green food, whilst late born foals only get weaned off when green food ceases or has lost already a little of its nourishing power. The early born foals, in like manner as early hatched chickens, can make more intensive and better use of all the benefits which the short East Prussian summer gives. For late born foals the summer benefits, with their light days of 16 hours' sun, offer more good things than so young foals can take advantage of. The early born foals can get about five months fresh Lucerne or clover, and this will amply counterbalance the disadvantage of getting a smaller quantity of milk from their dams before grazing. On account of these reasons covering begins in Trakehnen on the 15th of December and finishes at the end of May.

The most favourable day for covering foal-mares is the ninth day after foaling. Breeders of every country are agreed on that point, but views differ over any further necessary covering, especially of barren mares. It is possible that in different countries different rules have been observed with regard to mares in heat, and with regard to the readiness of mares to be served. I give my views here, based on long experience in East Prussia, and I must add that these have been confirmed by my experiences in Beberbeck and Courland. My visits to the Thoroughbred studs in England and France have, on the whole, verified my experiences in this direction. In exceptional cases I have had foal-mares covered even on the seventh or eighth day after foaling when they have showed themselves distinctly in heat already for several days, sometimes even beginning on the third day after the birth. Otherwise, the foal-mare is tried on the afternoon of the eighth day after foaling, and if she, as often happens, is not yet well in heat, I have tried her again the following morning, and got her covered if she was well in heat. If the mare is not well in heat she is tried daily until she is. Many mares come regularly in heat only on the tenth or eleventh day. I have never had mares forcibly covered which were not in heat. Neither do I know a stud which successfully uses such a forced service, as recommended by Schwarznecker. Furthermore, it may happen that foal-mares come distinctly in heat already on the third, fourth or fifth day after foaling, but are no longer in heat on the seventh day, when, as above stated, it was desirable to cover them. I consider this heat in nearly all cases a false one, without ovulation (removal of a ripe egg from the ovary), especially as these mares are mostly in heat about the ninth day, and also conceive. If the foal is born more than fourteen days too soon (*i.e.*, the time of pregnancy is less than 319 days), the

first heat is passed over, if the mare comes in heat as is usual the ninth day after the birth, which generally happens. The next heat is usually three or four weeks later. There are mares, however, which after premature births are always in heat at a later date, *i.e.*, instead of on the ninth day, only on the fifteenth or twentieth day after foaling, and which, according to my experience, may be covered at once without injurious consequences. If the too early born foal does not give the impression of not being fully developed, or if the conception of the mare is probably not attributable to the last, but to a previous covering, she may, even after premature births of less than 319 days of pregnancy, be covered the ninth day after foaling. If the mare has foaled in the night before the first of a month, she is covered, if everything is all right, on the ninth of the month, then tried nine days later on the morning of the seventeenth, and if she is in heat is covered again. The foaling day, or the day of the first covering, is always reckoned in order to get the right ninth day. These, and the following instructions for covering, are founded on the assumption, based on long experience, that the regular heat lasts nine days, and that if the mare has conceived in the first covering, the heat stops at latest on the ninth day after the first covering. There are numerous cases in which a mare after the first covering remains in heat even up to the eighth day, comes off on the ninth day and shows signs of pregnancy. These cases happen particularly with so-called foal-mares, *i.e.*, mares which come in heat on the ninth day after foaling, and which have been covered at the right time. On the other hand, it is probable that the mare still in heat after the first covering up to the ninth day, then covered again, has conceived by the second and not by the first covering, which can easily be seen from the many practical examples of properly kept service registers and stud books; firstly, by comparing the number of days between the covering and the foaling with the usual time of pregnancy of the mare; and secondly, by considering the colour and form of the foal when a different stallion has covered the second time. There are, moreover, many practical examples which prove that a foal-mare in heat on the ninth day after foaling could only be covered the ninth day after the first heat (as the stallion was not available), and conceived from this covering.

If the mare has not conceived after the covering, she comes, as a rule, in heat again three or four weeks later. After a strong heat the interval till the next heat is usually a little longer, and *vice versa*. It often happens that mares which conceive in the first heat come again in heat three or four weeks or more later. This heat is, however, a false one, and can generally be recognised, as the redness, swelling and moistness of the privy parts generally to be seen with a mare really in heat is not apparent. In the wild Steppe studs of Russia, where one stallion lives in the open together with twelve to fifteen mares (called Kosjaerk), one can clearly see how the stallion avoids the mares with a false heat pressing about him. He finds out the mares which are really in heat and covers them. Young Thoroughbred stallions do not

often understand this business in the first year, but learn it also gradually, as I myself have observed. There are, however, mares who, although they have not conceived, do not come in heat again for a few months, whilst others come in heat again in a fortnight. In the interval between the first and second heat mares should not be tried, as the many attempts often produce false heat, and it is not always possible to recognise it as such. If a mare visibly remains continually in heat after the last covering, she should not be covered again, as this heat is nearly always unnatural, and it is very improbable that the covering would lead to conception. Several cases have happened in Trakehnen where a mare, not conceiving easily, has been covered two or three times during the period of one heat, has continued to be in heat uninterruptedly for two or three weeks after the last covering, and yet proved to be pregnant without being covered again. If such mares are covered again they will very likely slip a small embryo, which in most cases is not noticed, and the mare is then wrongly considered as barren.

In the case of suckling mares which have not conceived during the period of the first heat, or which could not be covered, it is very uncertain whether they will come in heat again after three or four weeks. The returning of heat can only be expected after weaning, or in the case of sudden warm weather. When the foal-mares are in heat for the second time, it is advisable to serve them two or three times, the second covering on the third day, or if the stallion be not available, the fourth or fifth day. In most cases this period of second heat does not continue as long as the first, and it is therefore advisable to have her covered for the second time earlier, and if the heat continues to have the third covering on the eighth or ninth day, according to experiences of previous years. The covering of barren mares must be arranged in the same manner as that of foal-mares in the second heat, unless previous experiences point otherwise. Covering of young mares must, however, be arranged as for foal-mares in the first heat, *i.e.*, the first and ninth day. In the interval there must be no trial. When covering barren or young mares one must pay special attention that they are well in heat, and if that be not the case, the covering must be deferred until they are. With foal-mares heat appears on the ninth day after foaling, in most cases very suddenly, and decreases generally in intensity after a few days. Therefore, the covering of these mares is most effective at the beginning of their heat. The heat of barren and young mares, however, develops very slowly, and increases in intensity in the first two or three days. The covering of same, therefore, is not the most effective on the first day, but only when the heat has reached its culminating point. The second or third covering in this heat on the third, eighth or ninth day is reckoned from the day on which the mare has reached the culminating point of her heat. The days before the culminating point are not reckoned as heat days.

There are, of course, many exceptions to the above-mentioned rules. There are mares which are only in heat one, two and three days. The stud-

master must take note of such mares, but, of course, he must not wait till the culminating point is reached, but must get them covered as soon as they come in heat, and again on the following day. From my own experience I should recommend, in difficult cases, mares to be covered in the afternoon and again on the following morning. In the case of mares which will not conceive, I would advise them to be covered with two stallions, one immediately after the other, and take the desired stallion for the second covering, as I have observed that in this case the second stallion is usually the fertilising one, if it succeeds at all. I recommend, moreover, that mares which conceive with difficulty should be given a good trot about half an hour before the covering, in order that they may get warm and heated, or that their mode of living should be changed; *i.e.*, mares which run about loose in the stud should be put to hard work, and, on the other hand, mares which have been at work should be let loose. Sometimes change of place also helps. Lean mares conceive easier, but come in heat more difficultly. There are mares which conceive with more difficulty, or even not at all, from certain stallions. In Half-bred breeding I would, therefore, recommend that the stallion should be changed in the third heat, a thing which is often difficult in Thoroughbred breeding. Mares which are ridden or driven usually conceive with more difficulty. I would recommend that mares which do not come in heat should be put in another stable, if possible, together with mares in heat, or in warm weather and sunshine should be let loose with several others in a paddock, but should not be driven. They then should be finally allowed to be present when other mares are covered. During the first covering of young mares everything should be avoided which might frighten them. The mounting of a trial stallion is only advisable in exceptional cases with very troublesome and bad-tempered mares and specially valuable stallions.

Finally, I recommend breeders to try and get the mares pregnant from one covering; at any rate from as few coverings as possible. There certainly exists the danger of exciting the sexuality of the mares by too frequent covering, and by too many and too intensive trials, and of producing false heat without ovulation. I have come across hysterical mares often in heat, and frequently without ovulation, mostly in studs in which the stallions had not enough to do, and in which the mares were consequently covered too often. Young mares especially are spoiled by too frequent covering. In the case of suddenly occurring heat of foal-mares, usually on the ninth day after foaling, the commencement of the heat very probably coincides with ovulation, whilst in the gradually arising heat in the case of barren mares, ovulation probably begins later, perhaps only when the heat is at its culminating point. As a fertilisation without ovulation is, of course, impossible, the above recommended manner of covering of mares also complies with this point of view.

(k) Fertilisation.

In order to compare the results of fertilisation, I have given in the following lists the figures of the respective stud books, but not the figures of country studs of the different provinces. It is too difficult for a country stud to get reliable statements with regard to foaling, and consequently country studs are not able to furnish statistically serviceable figures. In addition to the statements of the German General Stud Book of Thoroughbreds, I must say that the foaling results in many years—perhaps in all—appear more favourable than they really were, because all those mares about whose foalings no information is given are not reckoned, but these mares may be pretty certainly considered as barren or as having slipped their foal. Moreover, the figures on the foalings have been asked for, sometimes with more, sometimes with less energy, and this explains the striking variations in the foaling results of Thoroughbreds in Germany.

The foaling results in Trakehnen have come out too favourably, because mares which were covered and sold were not counted. The greatest number of these mares sold, however, are barren, and this is generally the reason for their being sold in autumn.

Foaling results of Thoroughbred breeding in Germany.

Year	Foals born		Total	Aborted	Barren	Total Number Covered	Pregnant %	Of Pregnant Mares Aborted %
	Colts	Fillies						
1885	118	127	245	16	80	341	76,54	6,13
1886	141	118	259	27	87	373	76,68	9,44
1887	109	137	246	17	112	375	70,13	6,46
1888	135	137	272	16	123	411	70,07	5,56
1889	160	145	305	18	108	431	74,94	5,57
1890	140	149	289	29	131	449	70,82	9,12
1891	172	179	351	31	140	522	73,18	8,11
1892	177	193	370	34	162	566	71,38	8,42
1893	215	215	430	29	140	599	76,63	6,32
1894	234	215	449	38	175	662	73,56	7,80
1895	272	241	513	39	170	722	76,45	7,07
1896	257	253	510	41	188	739	74,56	7,44
1897	265	266	531	47	164	742	77,90	8,13
1898	291	296	587	40	180	807	77,70	6,38
1899	298	263	561	37	221	819	73,02	6,19
1900	268	262	530	60	210	800	73,78	10,17
1901	279	285	564	38	236	838	71,84	6,31
1902	318	259	577	42	231	850	72,82	6,79
1903	274	266	540	48	241	829	70,93	8,16
1904	266	253	519	54	227	800	71,63	9,42
Total	4389	4259	8648	701	3326	12675	73,76	7,50

Foaling results in Trakehnen.

Year	Foals born		Total	Aborted	Barren	Total Number Covered	Pregnant %	Of Pregnant Mares Aborted %	Besides Twins, part living, part dead
	Colts	Fillies							
1895	124	110	234	24	88	346	74,57	9,30	2 Pair
1896	126	142	268	18	55	341	83,87	6,29	2 ,,
1897	123	138	261	30	78	369	78,86	10,31	5 ,,
1898	145	136	281	19	63	363	82,64	6,33	1 ,,
1899	126	108	231	99	63	396	84,10	29,73	4 ,,
1900	119	116	235	21	140	396	64,65	8,20	3 ,,
1901	148	143	291	26	57	374	84,76	8,20	10 ,,
1902	163	135	298	17	74	389	80,98	5,40	5 ,,
1963	152	148	300	22	61	383	84,07	6,83	8 ,,
1904	146	138	284	28	81	393	79,36	8,97	9 ,,
1905	144	163	307	23	78	408	80,88	6,97	5 ,,
1906	144	172	316	16	67	399	83,21	4,82	5 ,,
1907	153	135	288	15	72	375	80,8	4,95	1 ,,
Total	1813	1784	3597	358	977	4932	80,19	9,05	60 Pair

Foaling results according to the East Prussian Stud Book, Vol. IV.

Year	Foals born		Total	Aborted	Barren	Total Number Covered	Pregnant %	Of Pregnant Mares Aborted %	Besides Twins, part living, part dead
	Colts	Fillies							
1899	1371	1544	2918	266	902	4086	77,92	8,35	8 Pair
1900	1471	1531	3005	258	1037	4300	75,88	7,91	8 ,,
1901	1524	1612	3136	287	1041	4464	76,68	8,38	4 ,,
1902	1522	1485	3007	291	1156	4157	74,06	8,91	6 ,,
1903	1565	1588	3153	307	1077	4537	76,26	8,87	8 ,,
Total	7456	7763	15219	1412	5213	21844	76,14	8,49	34 Pair

Foaling results according to the Hanover Stud Book, Vol, III.

Year	Foals born		Total	Aborted	Barren	Total Number Covered	Pregnant %	Of Pregnant Mares Aborted %	Besides Twins, part living, part dead
	Colts	Fillies							
1898	641	631	1272	81	383	1736	77,91	5,99	2 Pair
1899	655	651	1306	81	444	1831	75,79	6,04	2 ,,
1900	637	653	1290	85	521	1896	72,52	6,18	1 ,,
1901	621	652	1273	79	562	1911	70,64	5,84	2 ,,
1902	631	653	1281	75	632	1991	68,26	5,52	1 ,,
Total	3185	3210	6425	401	2542	9371	72,87	5,92	8 Pair

(l) The Time of Pregnancy of Brood Mares.

The time of pregnancy of mares is on an average of almost exactly 11 months' duration—equal to 334 days. Male foals are carried on an average 2 to 3 days longer than female foals. If the mares are well fed and their state of health is favourable, the time of pregnancy is shortened by a few days, and *vice-versa*. For example, in Trakehnen early covered mares which foal in November, December and January, carry on an average about 3 days less than those foaling in February, March and April, which have had for a longer time the less favourable winter food. Mares which work hard, or suckle their foals for a long time, carry a few days more. In the modern improved studs the time of pregnancy is shorter than in the wild Steppe studs. The so-called Kunters of Russia, Poland and Courland often carry 11½ to 12½ months. The improvement in meadows and prairies, and the better feeding of the brood mares in Trakehnen has, on an average, shortened the time of pregnancy by 5½ days, namely, from 335.42 days for males and 333.38 days for females in the years 1868 till 1877, to 329.9 days for males and 327.67 days for females in the years 1903 till 1907. The regularity with which female foals are carried 2 to 3 days less can be seen more clearly from the following special list for the years 1903 to 1907 inclusive :—

The time of pregnancy necessary in the case of :

	Trakehnen	Bajohrgallen	Gurdszen	Danzkehmen	Jonasthal
Colts . .	329.5	331.2	330.69	329.4	328.38
Fillies . .	327.37	330.36	327.95	326.46	326.24

There are mares which almost always foal 1 to 3 weeks too early, and there are others which require the same time in addition to the 11 months, and both often transmit this character for several generations. Young mares on an average carry longer than old mares. Many Trakehnen foals, having been carried only 315 to 320 days, have become prominent brood mares or stallions. According to experiences at Trakehnen, however, foals which have been carried more than 11 months have seldom become anything prominent, and those which have been carried more than 346 days never.

The stallion also has an influence on the duration of pregnancy corresponding to the peculiarities of his breed and family. Mares pregnant from asses carry a few days longer; twins are carried a few days less (about 10 to 14 days), and are mostly premature births with an unripe appearance. Many firstlings are not carried their full time, and are therefore similar to twins—premature births with an unripe appearance. The dry statistics should be carefully gone into in this direction. In order to produce the first foal well developed the dam must carry it some days longer than the foals which come after, but many young brood mares are not disposed to carry their first foal longer. All prominent firstlings which I know, *i.e.*, those that have become Royal Stud stallions, country stallions, brood mares, etc., were carried 5 to

10 days longer than other prominent products. In the case of mares foaling normally the time of pregnancy often decreases a few days in the course of years.

The Royal Stud stallions which have been born during my twelve years' activity at Trakehnen rank according to their merits as follows :—

1.	Polarsturm . . .	326	days	carrying	time.	
2.	Morgenstrahl . .	327	,,	,,	,,	
3.	Fischerknabe . .	333	,,	,,	,,	(Firstling)
4.	Prinz Optimus .	319	,,	,,	,,	(Only 1 covering)
5.	Poet	329	,,	,,	,,	
6.	Panzer	334	,,	,,	,,	(Firstling)
7.	Alter Herr . . .	324	,,	,,	,,	
8.	Amtsvorsteher .	323	,,	,,	,,	
9.	Ackermann . .	324	,,	,,	,,	
10.	Hoffnungsstrahl .	339	,,	,,	,,	(Firstling, also a 3-y.-o. covered mare)
11.	Empörer . . .	330	,,	,,	,,	
12.	Probstein . . .	322	,,	,,	,,	
13.	Justizminister . .	336	,,	,,	,,	
14.	Altgold	340	,,	,,	,,	
15.	Lungerer . . .	334	,,	,,	,,	
16.	Ethelwold . . .	336	,,	,,	,,	(Firstling)

Other Royal Stud stallions were :—

1.	Jagdnarr . . .	329	days	carrying	time.
2.	Morgenruf . . .	325	,,	,,	,,
3.	Dachdecker . .	325	,,	,,	,,
4.	Hagel	327	,,	,,	,,
5.	Handkuss . . .	329	,,	,,	,,

Of the above sixteen Royal Stud stallions, the first eight best were carried on an average 326.87 days, the remaining eight 332.62 days, the five sent away 327 days. Brood mares (about 250) were carried on an average in Trakehnen in the last five years 326.7 days, and the country stallions (about 200, including Royal Stud stallions) for the same period 328.8 days.

From these unfortunately few figures one can see—and this I believe to have approximately observed also at Trakehnen—that 8 to 14 days under 11 months of pregnancy is better than 1 to 8 days or more over 11 months. Further, on looking more closely into the Trakehnen Stud Books, I find that most mares which carried longer than 11 months were covered several times in one heat. It is very remarkable that mares which are only covered once during one heat generally carry some days less than they do in other years when they are covered several times during one heat. This is owing to conception occurring immediately after covering, thus preventing a further heat,

and causing the immediate commencement of a healthy fœtal development. In the case of mares which are in heat for a longer period, the egg-fertilisation appears to take place only several days after covering.

The climate seems also to have an influence on the carrying time. In Mesöheyes, Kisber and Babolna the average carrying time is about 3 or 4 days longer than, for example, in Graditz (colts 338.33 days, fillies 336.38 days), and in Trakehnen about 3 days less than in Graditz. Arabians in Weil and Scharnhausen are said to carry on an average about 345 days. Draft horse breeds carry about 3 to 5 days less than warm-blooded horses. According to the statements of Rudolf Endlich (Untersuchungen über physiologische Unterschiede edler und schwerer Pferde, 1895), colts of Belgian breed on the Worbzig Estate in Anhalt were carried 331.1 days, fillies 329.5 days; and the carrying time of Belgian and Rheinish mares in Mankartshof, near Neufs, was 329 days, taking the average for three years. The average carrying time of Percherons is, according to Tessier (Goltz Handbuch der gesamten Landwirtschaft, Vol. III.), 322 days. Moreover, I have found from different old stud books that the carrying time of brood mares 150 years ago of all breeds was much longer. As warm-blooded breeds reach a greater age than cold-blooded ones, and as the average age of all horse breeds 150 years ago was higher than it is now, we must conclude, when considering the above comparisons of carrying times, that on the whole a longer carrying time has as a consequence a greater age. The long-lived Arabians are even to-day a good example in this respect.

(m) Abortion and Joint-illness.

If the milk begins to flow some time before the expected birth it is a sure sign that the foal is ill in the womb; or if the mare carries twins, that one of them is dying. Generally abortion follows. I have noticed several times, however, that the milk again ceased to flow some weeks later, and that the mare produced a healthy foal at the right time, so that one could not really see the consequences of an illness doubtless existing, but which had been fortunately surmounted by the foal. In other cases a healthy foal was born approaching the right time, and at the same time a dead twin of about the size of a cat. I also know of one case in which one dead twin was foaled in autumn and the other healthy twin in the following spring. As according to the above, the abortion may be, however, expected in most cases, it is better to separate the mare, at any rate during the night, so that she may not slip in the same stable where there are other pregnant mares, which might be infected by the undoubtedly contagious abortion bacteria. Late covered mares are in North Germany more inclined to slipping the foal than early covered ones. After abortion it is very important to protect the mares against colds, which they are very apt to catch in this condition. I therefore recommend that mares after abortion should be put in a warm

stable free from draught, and well covered up also. Moreover, it is necessary to wash the uterus twice daily with a lukewarm solution of Chinosol to 1 per 1,000 for about 6 to 9 days, *i.e.*, till the orifice of the uterus is completely closed. I have chosen for these cleansings at Trakehnen the above solution because it more surely kills the bacteria than the solution of ½ per cent. Lysol-Solution recommended by Professor Ostertag and others. The latter has the additional disadvantage of producing in many mares strong pressure and vehement pains. As early as the beginning of 1890, the Chief Veterinary Surgeon, Matthias, in Graditz, used such cleansings of uterus after abortion at that time by the aid of Creolin-Solution. This cleansing had such a successful effect in 1893 with the Thoroughbred mare Sappho, amongst others, that in the following year she produced the Austrian Derby winner, Saphir. According to my experiences at Trakehnen, these cleansings have prevented in most, if not in every case, repetition of abortion, and have led to the production, at the right time, of healthy and strong foals.

The mare should only be covered after abortion when the normal carrying time has passed. If the abortion takes place after a pregnancy of 4 months or still less, she can be covered, after having been properly washed, when next in heat, which generally occurs 9 days later, with good results. I have experienced this several times at Beberbeck as well as at Trakehnen.

The uterus of the mare should also be washed if the foals are joint-ill, or if the premature births are suspected of joint-illness. Mares whose foals suffer from joint-illness should not be covered on the 9th day after birth, but in the subsequent heat, *i.e.*, 3 to 4 weeks later, after the above-mentioned cleansings, which should be used after birth for about 3 days, during the first heat for about 6 days, and at the beginning of the second heat once or twice. It is not generally advisable to have as brood mares foals which have suffered from joint disease but which have been cured. In Trakehnen only one such mare (Trommel, 1899 by Jenissei), which as a young suckling foal suffered from a pronounced joint-illness (right hock inflamed), was made a brood mare. She has up to now without interruption produced four good and healthy foals. To prevent the transmission of abortion it is advisable :

1. To clean and disinfect the stable in which the mare has aborted.
2. To isolate the mare up to the close of her first heat, *i.e.* about 18 days.
3. To keep the mare warm during this time, and to protect her very carefully from cold.
4. If the abortion has taken place in the pasture, to dig up the spot and to discontinue the grazing of brood mares on that part for at least 4 weeks.

Whilst nearly all scientists still deny the ætiological relation between abortion and joint-illness of foals, all practical breeders, on the other hand, agree with the point of view held by Count Lehndorff in his handbook for horse breeders, 1881, namely, that joint-illness is always inherited, *i.e.*, has arisen during the pregnancy in the womb. Professor Dieckerhoff intended

in the next edition of his special pathology and therapy to support the view of Count Lehndorff as to the relation between abortion and joint-disease. According to the clinical observations (without microscopic investigations) which I have made at Beberbeck and Trakehnen, I consider Count Lehndorff's view correct, although Ostertag's researches distinctly contradict it. When making observations at Trakehnen in 1899 on the occasion of the epidemic of abortion, the Chief Veterinary Surgeon, Matthias, in his report on the abortion of mares and the joint-illness of foals, reports as follows:—

"The disease of joint-illness principally consists of an inflammation of the joint which is connected with lameness. Hence this disease has always been called 'lameness' ('Lähme')."

In my opinion, we are at the present only justified in speaking of joint-illness ("Lähme") if there is an inflamed swelling of the joint, together with general fever. According to Bollinger, joint-illness arises from a septic infection of the navel wound, *i.e.*, from a navel infection after birth transmitted by the blood. Accordingly, I have found in nearly 80 per cent. of all cases of joint-illness which I have come across, an inflammation of the navel or navel veins, with their accompanying and subsequent symptoms. Many authorities on joint-illness consider themselves justified in diagnosing for joint-illness in the case where a foal has been born weak and dies with the symptoms of general weakness. These authorities consider a yellowish tint of the Sclera during lifetime as a pathognomonic symptom of joint-illness. If the new-born foal dies soon after with all appearance of catarrh of the intestines, they consider this also as joint-illness. If at the *post-mortem* examination of the foal there is found a yellowish colouring of the underskin, or if the same colour is found in the peritoneal covering of the intestines, or if in the abdominal and thoracic cavity and in the pericardium there is found a quantity of yellowish fluid, and the musculature is greyish-yellow and crumbly, the diagnosis is for joint-illness. The same pathological changes may be found with products which have been slipped in consequence of epidemic abortion, or with foals still-born as a consequence of abortion, or finally, with foals which were born alive but soon died of weakness. All these things are, as I have been well convinced at Trakehnen in 1899, consequences of epidemic abortion, the cause of which has been proved by Professor Ostertag to be a distinct coccus.

It has been asserted that "epidemic abortion and joint-illness are caused by one and the same germ." This is contradicted by the fact of Professor Ostertag having found in cases of joint-illness a different coccus, with which he could by innoculation produce the appearances of joint-illness. He did not find this strepto-coccus in aborted foals. There is, therefore, no valid reason to consider both diseases identical. I, however, believe that I shall be safe in saying that the greater part of the so-called cases of joint-illness, which lead to death without metastatic inflammation of the joint, are really nothing but the consequences of abortus coccus.

I have just stated that I found in at least 80 per cent. of all cases of joint-illness a navel illness. One may, therefore, consider it here proved, without further discussion, that the strepto-coccus has penetrated to the body from the navel wound after birth. The question now arises whether there also exists an intrauterine origin of the joint-illness. In about 20 per cent. of the cases of joint-illness I have found no pathological changes of navel and navel veins. To take these cases as a proof of intrauterine infection seems to me too daring, for the strepto-coccus may easily have entered into the body of the young animal by some other way (feeding or breathing), or the illness of the navel may already have gone on so far that it can no longer be proved in a rough anatomical way.

If the joint-illness had already originated in the womb, then one would expect also cases of hereditary joint-illness, *i.e.*, hereditary acute, pyæmic inflammations of the joint. No authority living at the present time has seen such a case of hereditary joint-illness. Supposing that the three cases of hereditary joint-illness (compare Worz Uber Staats-oder Landespferdezucht-Anstalten Wurtten-bergs, page 105) extracted by Professor Sohnle from the complete literature on joint-illness have been rightly noted and interpreted, then there may, of course, be a possibility of an intrauterine origin of joint-illness. At the same time, one may, however, conclude therefrom that this sort of origin of joint-illness by intrauterine infection is very rare.

It has been observed that in the years of epidemic abortion cases of joint-illness are more frequent. Of the about 290 foals which are born yearly in Trakehnen, taking an average of five years, 8.4 die of joint-illness and 6.6 of weakness. In the abortion year 1899, 10 foals died of joint-illness and 19 of weakness. The loss by joint-illness did not in this year, therefore, exceed the average very much. In the case of a great number of foals suffering from joint-illness, however, there may have been about 15 cured of the illness. In these latter cases the illness began very late, even 6 weeks after birth, and an illness of the navel could not be proved. The fact of joint-illness beginning so late is no proof of intrauterine infection, in spite of the non-existing navel illness.

Concerning the combating of joint-illness, good results have without doubt been obtained by carefully attending to the navels of the new-born foals. The cleaning of the uterus of the mare and the washing of the penis of the stallion have certainly produced satisfactory results in fighting epidemic abortus. As an example of this, I may say that at Trakehnen in the epidemic year 1899, there were 93 abortions and 6 still-births. In the following year there were, after this treatment, only 19 abortions and 2 still-births. The yearly average of abortions and still-births in Trakehnen is 21. The cleansing of the uterus and washing of the penis have not led to a further decrease in cases of joint-illness in Trakehnen. This is another proof against intrauterine infection.

Whether there is an intrauterine existence of joint-illness or not, in any case it is recommendable, as is done in Trakehnen, to clean in the same manner as in the case of an abortion the uterus of all those mares whose foals die under symptoms of weakness, or show signs of weakness and illness shortly after birth, or suffer from joint-disease.

We have seen that the coccus of abortus does not in every case lead to abortion, but, nevertheless, it hinders the development of the foals in such a manner that they are born weakly and ill. Even if, as I suppose, these are not cases of joint-illness, nevertheless, the coccus of abortus which is in the uterus is destroyed by washing. If the orifice of the uterus is already closed when the foal shows signs of illness, the uterus must be washed at the first heat. The penis of the stallion must be washed after every covering. The most effective manner of combating joint-disease is, however, to take especial care of the navel. Complete extermination of joint-disease and of abortion will scarcely be attainable in larger studs where the greater quantity of brood mares produce such a great deal of epidemic matter, for the hygiene of confinement in stables is far from perfect, neither can the cleanliness of the stableman who acts as midwife always be relied upon. Judging from the successes of Trakehnen, however, even in large studs one may succeed in limiting sufficiently the losses caused by joint-illness and abortion.

(n) The Birth.

A normal birth occurring at the right time causes no difficulties, and seldom lasts longer than 15 minutes, reckoned from the beginning of the first visible signs of the approaching birth labour. Under normal conditions the birth itself lasts about 3 minutes. Three men are sufficient to assist. Above all, these men must keep quiet, and make their observations standing far apart, so as not to disturb the mare whilst she chooses the place which best suits her for foaling. Only when the mare, on account of the first stronger birth throes, has laid down and stretched herself out, should the studmaster see whether the head and the two fore-legs of the foal are in the right position. According to experiences at Trakehnen, irregular position of the foal in the womb, needing the assistance of a veterinary surgeon, is very seldom, as the studmasters are generally very capable. As soon as the head and the two fore-legs can be seen as far as the knee after the bursting of the so-called bladder, clean straw, which should be at hand, must be put behind the mare as a bedding for the foal, and the skin of the ovum must be torn far enough to enable breathing to commence. Simultaneously with the labour pains, the men must begin to pull at the fore-legs if need be with ropes round the pasterns, generally in the direction of the hocks, *i.e.*, away from the anus. When the birth is complete, at Trakehnen the navel is disinfected as follows: The navel string is cut with a pair of scissors which have been kept in undiluted lysol, at a distance of about 3 fingers width from

the belly of the foal. After the blood has been properly pressed out of the stump, the latter is washed with a solution of a 1 per 1,000 sublimat, then it is dried with wadding and painted on all sides with a 10 per cent. solution of blue pyoktanin in spirits.

As soon as the navel has been disinfected, the foal is carried to the head of the mother, and she will then commence to lick the foal. The attendants should now leave, only one remaining in the stable, observing the mare from a short distance. As soon as the after-birth has been removed, which generally takes half an hour, the wet straw is replaced by dry.

In the twelve foaling years which I have spent at Trakehnen (from 1896 to 1907 inclusive), apart from all abortions, out of 3,388 births, only 38 have been difficult births (including 12 breech-births), where the assistance of a veterinary surgeon was necessary or desirable. Of these 38 difficult births, 23 ended with the death of the foal alone, 2 with the death of the dam and the foal, and 2 with the death of the dam alone—altogether 27 mishaps. Accordingly, 3,363 foals were born without mishap, of which 1,689 were colts and 1,674 fillies. Twin births or abortions of twins happened in these twelve years 58 times.

(o) Treatment of the Brood Mare after the Birth.

If the foal dies, the mare should be used, if possible, as a nurse. When this is not done, she will suffer in her health, and give less milk in the next year. If the foal at the beginning is too weak to completely empty the udder of the dam, the udder must be carefully milked at least three times daily. This happens to nearly all foals, in consequence of a slight stomach illness, when they are two or three days old. As one does not like to lift the feet of the mares up in order to round their hoofs about two or three months before they foal, this must be done after foaling. The same thing applies to the cleaning of the stables. The observations made at Trakehnen show that very often a few days after the cleaning of the stables abortions took place, and this seems to confirm the old doctrine that the smelling nerves of pregnant mares are very sensitive, and that evaporation of the dung and the smell of tar cause abortions. In Thoroughbred breeding it is, therefore, advisable to remove daily all dung, together with the wet straw, and to spread what fresh straw is required, as in the race stable. It is advisable to remove at once after foaling the fresh dung, to prevent the foal from eating same, a thing which they like, but which is dangerous. Foals should be weaned after 4½ to 6 months. A longer suckling time is neither good for the mare (even if barren) nor the foal. After the foals are weaned is the best time for finding out mares which have not conceived, and, if there is time, to get them covered again (with two coverings, evening and morning, or on the first and third day). In my opinion, there is no benefit in omitting to cover good mares for a year in order to spare them and improve their further

products. According to observations I have made, this has not been successful. To cover mares every second year as is done in some countries produces very bad fertilisation results. Barren mares are easily recognisable in autumn, even if they are not in heat, by their less smooth hair, and by their worse feeding condition. After six months' pregnancy the movements of the foal can easily be felt, especially during and after drinking. In the case of younger barren mares, light work up to covering time is in most cases very useful. For mares which do not easily conceive, in most cases plentiful, but not quick work, is useful, especially if they are inclined to be fat.

CHAPTER II.

The Judging and Treating of Foals.

(a) Judging Suckling Foals.

It is safest to judge the exterior of suckling foals one or two days after birth. Eight or fourteen days later one can, perhaps, judge more safely as to whether they will turn out well, but in most cases the judging of the exterior has then become more difficult. Just as one can judge better the real capabilities of Thoroughbred yearlings by the autumn trials than by a few gallops as two-year-olds, so in the same way it is safer to judge the exterior immediately after birth than when the foals have been weaned, or as yearlings. To rightly judge a young suckling foal one must catch it at a moment when it stands in a natural position, and as far as possible equally on its four legs, and holding the head at a height natural and convenient to him. This moment will nearly always be brief, and the slightest changes of the centre of gravity give a wrong impression. If the centre of gravity is pushed too far forward, *i.e.*, if the foal stands with the fore-legs somewhat under it, it appears perhaps bow-legged, and if the head is held too high, it appears often to have a swaying back. If the fore pasterns are still very upright, it appears high-legged; if they are very sloping, it appears over-built, etc. One must also know that suckling foals often grow out of some of their bad characters. To these belong, first of all, the X-legged position of one or both fore-legs. There are stallions, like Chamant and several of his sons, whose progeny, almost without exception, were born with X-shaped fore-legs, and who already as yearlings stood and walked perfectly straight. A son of Chamant, Panther, never transmitted this X-shaped position of the fore-legs, but most of his progeny stood with turned-out toes and had an irregular walk. As a rule, it seldom happens that foals born with X legs walk irregularly later. Further, foals generally grow out of the following defects:—Too long, soft pasterns, long hind-legs standing out behind, polished knees or bending back, as well as long, upright fore-pasterns, all sideway leanings, as well as all misplacements (in the womb) of the fore and particularly of the hind-legs. The bending of one or of both hind-pasterns, which occurs so frequently and often very pronounced, nearly always grows normal. The other proportions of the body do not alter. One thing remains to be noted, *i.e.*, that foals

always appear to be higher legged than they are when they become fully grown. The proportion of the length and the width of the body, especially of the back and crupper, strength of joints, very high or deficient withers, good or bad crest, remain the same. Short necks remain short, but are not so conspicuous in a fully-grown horse as with a suckling foal. The same thing applies to upright and to sickle hind-legs, which change little, but are not so conspicuous in a fully-grown horse as in a young foal. Outwardly placed pasterns often become all right if this outward position only consists of a bend of the pastern joint round a horizontal axle. If, however, the outward position consists of a twisting of the whole fore-leg commencing at the elbow round a perpendicular axle, this fault cannot be remedied. Most narrow-toed positions of the fore-legs consist of the twisting of the whole leg round a perpendicular axle, and therefore do not improve. Often, and usually between the second and the third year, this position becomes much worse. Only if both pasterns deviate to the same side, *i.e.*, if the one leg stands wide-toed and the other narrow-toed, one may assume a twisting round a perpendicular axle, and therefore an improvement of both pasterns, including the inwardly placed one, is probable. Whether the crooked fore-legs will grow straight again can only be verified if one knows the development of foals of certain parents. For example, the progeny of Optimus born with crooked fore-legs retain same, whilst nearly all the progeny of Perfectionist were born with crooked fore-legs and became straight without exception. All the progeny of Hazlehatch are always born with straight fore-legs, which later on, however, generally become crooked.

High-leggedness, already recognisable in the suckling foal (of course, the above-mentioned upright position of pasterns must, if necessary, be taken into consideration when judging), nearly always remains. Faulty position of the ankle joint (tied in below hock) is very seldom got over so completely that traces of it cannot be perceived later, but the most distorted hocks, however, often improve remarkably, especially if the connection is broad. No improvement can be expected, however, if the upper part of the hock (calcaneus) is inclined too far forward. It is often very difficult and unsafe to rightly judge the hocks of foals born very much misplaced (in the womb). There are stallions, like Pomp and Morgenstrahl, whose progeny were born mostly with their hinder parts very much misplaced and crooked, but in the short space of two to six months they grew out of the seemingly impossible twists, almost having the appearance of curbs. One can only judge approximately correctly if one knows the manner of development of the progeny of certain stallions. Optimus' progeny, for example, which were born with hocks a little ill-shaped (which, however, seldom occurred), scarcely ever lost this fault. The same thing applies to the progeny of Hazlehatch. Generally speaking, the chance of growing out of weakly supported and improperly set hocks is least if there is no misplacement (in the womb) connected with these faults, and *vice-versa*. Furthermore, small

born foals grow out of their faults less often than big born ones. The former have generally sufficient room in the womb and, therefore, do not get misplaced.

To correctly judge the nobility of the foal, one must not forget that this is a point which changes very little, *i.e.*, they will never look nobler than they do as young suckling foals. The young age is very apt to hide coarseness. In judging the strength of bones of foals, one must not be deceived by the long hairs on the legs. A big, dry head indicates a strong bone development, whilst the fairly small head generally indicates thin, cannon bones. Foals born with short, smooth and shining hairs on the legs look lighter than they are, and must be judged favourably, as one may expect from them quality, dryness, hardness and health. Short and dull-looking hair is a sign that the foal has been born premature and unripe. I have never yet known a case where such premature births have developed into first-class horses. The so-called over-built foals, which is mostly to be seen with one and two-year-olds (nearly all progeny of Volapuk), nearly always grow normally.

In judging early the exterior, one must, of course, take into consideration the healthy development of the foal, for without such this growing out is not only not to be expected, but rather a relapse in many parts may be feared which were originally normal. The back especially gives way most easily, and becomes, even during the suckling, or immediately after the weaning, a low back, on account of disturbed development and nourishment, the causes of which are often hidden. Low backs which suddenly originate after a severe illness, such as glanders, often completely disappear, whilst those arising from no visible acute illness never get all right. The most conspicuous example of this which I know is the Royal Stud stallion Empörer, born 1899 by Lehnsherr (by Chamant) and Emigrantin, who as weaning foal got a very bad low back commencing immediately behind the withers after a very severe attack of glanders. He was transferred in the spring of 1900 to Guddin to the geldings. In the course of about nine months the low back disappeared completely. In the autumn he was put to training as a two-year-old, and is to-day Royal Stud stallion in Trakehnen. He has a faultless back, and his progeny also. Generally speaking, the foals of high-blooded stallions, especially Thoroughbreds, develop better than those of coarser stallions. For this reason the former grow out of their faults better than the latter.

(b) Treatment of Suckling Foals up to the time of Weaning.

The first or so-called Colostrum milk is especially useful to the foal on account of its somewhat opening effect, thus hastening the getting rid of the first fecal substance of the foal known as Meconium. This Colostrum milk must not, therefore, as unfortunately often happens, be milked off. The Meconium passes away under normal conditions in the first twelve to twenty-

four hours, and in many instances two hours after birth. If this happens too rapidly it is often not a good sign. Diarrhœa follows, frequently a sign of weakness, or beginning of joint-illness. A delay of this important removal causes meconium colics, which may very easily become dangerous. This disease generally attacks foals carried more than eleven months, and male foals more frequently than female foals. I have never yet noticed this meconium colic in foals carried less than 320 days. In Trakehnen in 1896 the chief veterinary surgeon, Dr. Töpper, first applied very successfully the Meconotorium, constructed by Masch, for the purpose of artificially removing the Meconium. As this instrument can be easily handled by non-professionals, I here state what Dr. Töpper says about it :—" The operator sits on a chair, and the foal is held in a proper position. The instrument, and the first or second finger of the left hand, are oiled. A left finger is carefully inserted, and with it the Mecotorium (the convexity of the spoon downwards). If one presses the handle down the spoon presses into the meconium, and it is then possible to bring it out in parts as far as one can reach forwards. One g. calomel with 50 g. rizinus are afterwards given for the final removal, and an injection of luke-warm water made. The instrument may be had from Hauptner-Berlin." I would like to add that the spoon must be used with the greatest care, for the rectum of the foal is not capable of much resistance, and if it were pierced with the spoon death would always follow.

A slight harmless diarrhœa of the foal announces the first heat of the dam. For a continuous or malignant diarrhœa the following treatment has proved successful in Trakehnen :—

If it is a case of the dangerous grey stinking diarrhœa of foals, the intestines must be completely emptied as quickly as possible. To obtain this result, give the foal 50 to 100 g. rizinus oil in one dose (an ordinary spoon contains about 10 g.). The day following give it again in one dose 10 to 20 g. tincture of opium (a spoon contains about 15 g.) with four times as much mother's milk. If necessary, this treatment with the tincture of opium, gradually increasing from 10 to 20 g., is continued for several days, and if need be even in two doses daily. If in the course of this treatment the foal should suffer from inflated belly or colic, the treatment of opium must be abandoned.

If it is a question of the ordinary watery diarrhœa, a dose of 50 to 125 g. of rizinus oil given at the commencement often renders further treatment superfluous.

Continuous doses of tincture of opium are essential if the diarrhœa continues for some time. As a foal soon gets into the habit of taking tincture of opium, increase the doses slowly, from 10 to 25 g., and also from once to twice daily.

Instead of the oats, which cannot be digested by the weakened gastro-intestinal canal, it is advisable in cases of chronic diarrhœa to give a mixture

of oats and linseed meal ground very fine, almost to a mash, 1 cwt. of oats to about 5 lbs. of linseed. According to my experiences, a complete change of food of the dam, as regards oats and hay, as well as of bedding straw, does not have any influence on the diarrhœa of the foal.

The first nine days after birth the brood mare must be separated, along with the foal, in cases where the mares are together with several others in large stables and not in special boxes. Later on, when the foals are strong enough, it is better both for dam and foal to be able to move about freely in a large stable. Unfortunately, the arrangements in Thoroughbred studs, on account of too great anxiety, are usually not calculated to give these great advantages of freer movement, and to provide at the same time special places for oats and hay for the foals. When it is fourteen days old the suckling foal usually begins to nibble oats. It can be taken for granted that on an average the foals can eat as many pounds of oats daily as they are months old. Besides the oats, it is advisable to give the foals daily as much fresh hay as possible, also clover hay. A four months old suckling foal must have daily 4 to 5 lbs. of oats, and almost as much hay. If the dam gives too little milk, and it is possible to teach the foal to drink cow milk, which is often very difficult, an addition of about 3 to 5 litres of fresh undiluted cow milk (three times daily 1 to 1½ litres direct from the cow) is to be recommended. I have never yet found that this addition of fresh undiluted cow milk had any bad effect on suckling foals. Stunted weaning foals, as well as suckling foals, whose dams die suddenly in giving birth or somewhat later, must have daily 6 to 9 litres fresh undiluted cow milk. One litre every two hours during the day and every four hours during the night is the right quantity. It is reckoned that a good brood mare gives about 10 to 12 litres daily.

About four to six weeks after birth the foal's hoofs must be attended to. The foal must, however, have been already accustomed to being led for a short distance and held by the halter. This care of the hoofs, which is so important for the whole life of the horses, and which can rarely be recovered later, consists in cutting at first the fœtal frog, which is provided with unhorned, soft epidermal material, with a sharp knife, holding it level, in such a manner that the hoofs get the necessary form of frog, with a soft depression in the middle and absolutely smooth surfaces. The remaining spongy substance must be removed from the sole in such a manner that it receives its proper depth. Then the wall must be cut down on the quarters and toe as the form and position of the hoof necessitates. Frog and inferior border of the wall must lie on one level, so that the frog also helps to carry the body. The lateral lacunae of the frog must be kept smooth, and wide open below. The small cracks in the lateral lacunae of the frog are removed by so-called air-making, *i.e.*, by a notch cut. However, under no circumstance must the strength of the bars be weakened. The most careful removal of all, even the very smallest cracks, especially in the median and the two lateral lacunae of the frog, is very important, because it is impossible to keep

them clean otherwise, and they therefore easily become the means of causing putridity. Every hoof must be brushed over at once, after cutting, with tar; of course, only the sole, including the frog. This must be repeated, in the case of suckling foals, every four weeks before grazing time. It does not only make the putridity of the frog impossible, but also assures a strong and broad development of the frog and of the hoof. During grazing this work is not so often and so urgently necessary as during the winter stabling, therefore most necessary for early born foals. The wearing of the hoof caused by plenty of exercise in the pastures, and this effect of the damp earth which becomes fastened to the hoof, and which is beneficial to same, by its massaging, widening and preventing putridity, does away with, to a great extent, the above artificial treatment of the hoof. Wollstein says: "The reason that foals in natural studs suffer so little with their hoofs is because they have plenty of exercise." Even in Thoroughbred breeding the early care of the hoof is, unfortunately, much neglected, and is the cause of so many contracted hoofs with curved walls and atrophied frogs, which again in their turn produce an early break down.

Simultaneously with the attention to the hoofs begins also the cleaning of the foals. It is not necessary to put a halter round them or to hold them, as, if it is done sensibly, they enjoy it, and it is the first means by which one can gain their confidence. The purpose of cleaning (of course, only with a dandy brush) is not only to keep them clean and prevent lice, but also for the very beneficial scrubbing of the skin, which is especially good for foals born early in the year. Later on during grazing, wind and rain do their share in this beneficial massaging of the skin.

Foals get their first exercise in the open when they, 10 to 14 days old, go with the dam two or three times daily to drink from the trough in the yard. Very soon afterwards, at the latest at the age of 6 weeks, they must be exercised with the dam in the open, commencing with a quarter of an hour daily. Of course, these exercises must take place regularly every day, and in all sorts of weather, being extended to at least one hour daily, taking into consideration wind and weather, so that the dams as well as foals get accustomed to fresh air, weather and wind when the grazing commences. On warm and sunny spring days it is advisable to let out at their leisure all the brood mares with their suckling foals in the yard for an hour in the afternoon, over and above the regular exercise as mentioned above. The beneficial fresh air will strengthen brood mares and foals and cause them to mix one with the other, which is very useful. Mares which have not become pregnant will often come in heat on such occasions.

Just as important as this advice is—*i.e.*, to have open air exercise in all kinds of weather—for our Northern climate, so is it just as unnecessary for England and France, admirable horse breeding countries, endowed with the Grace of God. My neighbours have often called the above method of foal rearing an exaggerated and unreasonable attempt to become hardy. Never-

theless, I have proved that even the youngest foals can endure much more exercise, frost, wind, rain and all sorts of bad weather than I and many other people supposed. This hardening method of rearing is very useful in every respect for all foals, and does much to improve their health, hardness, and finally, performing capabilities. In my attempts at hardening I have not even reached the limits at which a distinct advantage to the foals ceased—not to speak of the limits at which they might begin to suffer. Of course, unreasonable attempts at hardening which do not avoid sudden and unprepared changes would soon reach those limits, but an observing and individualising breeder will know how to act to avoid many dangers which I cannot mention here, as for example, when exercising on hard ground, foals with an inclination to upright hoofs should be suitably shod at the right time.

After 4½ to 5 months suckling foals lose their foal hairs, and may then be weaned. It is good for foals if the suckling time is extended to 5½ or 6 months, and this is at any rate advisable in the case of barren and late covered mares. Before weaning—it is best to begin at the age of 3 months—foals should be led by the halter, so that one may lead them without their dams to their own stables or to other places on the farm. The best time for weaning is towards the evening. Dam as well as foal become quiet much more easily than when they are weaned in the morning. Foals which cough much, or suffer from glanders, must be weaned some weeks later, after having overcome the illness. Suckling foals get over glanders sooner than weaned foals. Weakly weaned foals, and such as have not yet lost their coat, may be assisted for 1 or 2 months with cow milk, about 6 litres daily. To give cow milk for a longer period, especially to Thoroughbred foals, has the disadvantage that it causes them to grow fat, and possibly somewhat soft, therefore later more difficult to train. On the other hand, one must take into consideration that weaned foals get over glanders more easily if they are given cow milk during the time they have the disease. Foals which are inclined to grow fat may be given skimmed milk. In the case of brood mares which are barren, and therefore needing no protection for an embryo in the womb, it is not advisable to suckle their foals longer than 7 months at the most. In many Russian studs, where the suckling period lasts even longer than 12 months, I have found that this was not good for the foals. It seems to me that they make poorer use of the oats and hay when suckling so long.

(c) Treatment of Weanlings.

With a little tact and much love one succeeds in manipulating the weaning process, so deeply connected with the whole life of the suckling foals, in such a manner that no interruption in their development occurs. During the first 24 hours at least they must, unfortunately, be kept in their new stables. In my opinion it is necessary to separate the sexes immediately after the

weaning, or a few weeks later. It is quite common for well fed six-month-old colts to attempt to cover, and many fillies less than one year old are already often in heat. In the stud Tammist, of Mr. B. v. Liphardt, Dorpat, in the summer of 1868, a one-year-old filly (noble Half-bred) was covered whilst grazing by a one-year-old colt (also noble Half-bred) and became pregnant. As a two-year-old she had a living, but very small colt. The Thoroughbred filly Experiment, 1842 by Bay Middleton out of Miss Craven, was covered at 11 months old by Venison, and produced when she was 1 year and 10 months old a living colt, which died after 24 hours. In the following year Experiment produced a filly by Venison. Experiment was in Lord Bentinck's stud, who had a special craze for such extravagant trials (see General Stud Book, Vol. VI., and "Post and Paddock" by The Druid, page 208).

For weaned foals a roomy, light stable, with constant fresh water and a good meadow close at hand is essential. The more foals are weaned at the same time the sooner they settle down, and when in a few weeks the next lot of weaned foals are put in the same stable, the weaning will be much more easy. The very best picked food, always attainable fresh water, and association with horses of their own age, soon helps the foals to forget their dams. During the time of their growing the fastest, young foals require very urgently plentiful and frequent supply of water. If that is not possible their development will be distinctly retarded. Weakly and backward foals must be separated—at least in the stable—if they are badly treated by their more robust companions.

To good grazing also should be added fresh Lucerne, Sainfoin, or green clover, with or without Timothy, *ad libitum*, especially in the evening, and in the hot summer weather at dinner time also. I do not recommend the giving of clover to Thoroughbreds, as experience has proved that foals fed with clover, green or dried, look very well but are much more difficult to train, suffer in the wind, *i.e.*, have a thick wind. The best food for Thoroughbred and Half-bred foals is certainly Lucerne, and the longer foals can be fed with fresh, good, and not attacked by rust Lucerne (in East Prussia generally from the middle of May to the end of September and the beginning of October) the better they will develop. When the Lucerne or the clover begins to blossom, then is the most favourable moment to commence with green food. Before the blossoming foals do not care to eat Lucerne. Foals, and particularly young ones, prefer, however, green clover to Lucerne. It is not therefore advisable to substitute often Lucerne for clover. To obtain an early second crop of Lucerne or clover, a part of it must be cut before blossoming. This early cut part will then be ready as a second cut with commencing blossom when the first part has been eaten up or become too dry. In a few words, it is only with great care and a correct division of the available land for food crops that one will succeed in obtaining an uninterrupted and regular supply of green food from spring to autumn. Those

breeders possessing such good pastures that they do not need an addition of Lucerne or clover are to be congratulated. In East Prussia we have not got them.

For weaned foals 6 lbs. of oats are sufficient at the commencement, and for those who desire to, or must save—for example, military horse breeders —6 lbs. are sufficient for the whole period, if green Lucerne or clover can be added. Those who desire to breed breeding material or racehorses, or first-class horses for use, must increase the oats monthly by 1 lb. per day up to at most 12 lbs. I do not consider that generally a greater quantity is necessary, not even in Thoroughbred breeding. At Trakehnen I have never given on an average more than 10 lbs. of oats. Of course, besides this average, an addition of about 3 lbs. of oats is necessary for some backward foals, and foals which eat very little hay. The portion of oats is split up into three meals—morning, noon and evening—for supper a little more. The foals must always be fastened up when the oats are given, so that each one gets its right quantity and so that it can be seen which one has not eaten its portion. It is very useful to give weaned foals with every feed of oats a handful of ground or roasted linseed (about ¼ lb. daily). When in autumn the green food is finished and the winter ration of about 10 lbs. of hay (Lucerne or clover hay) begins, it is advisable to give them for about three to four weeks about 6 litres of fine chopped carrots daily, and afterwards for the whole of the winter twice weekly about 2 litres wheat bran, together with oats. In those years in which the hay has grown well in consequence of a dry and warm summer, and has been well got in, having therefore a greater nutritive value, we have, in Trakehnen, diminished the share of oats for weaned foals, and given in autumn and winter at the most 9 lbs. to prevent fatness. A diminution of hay or clover would have a bad effect on the formation of bones, as the bone-forming factors are not in the grain but for the most part in the hay and green food, which contains plenty of lime. Very coarse clover or Lucerne hay produces in young weaned foals diarrhœa, as it irritates the intestines, and it is better to keep same for older foals. Three weeks' feeding with meadow hay causes this diarrhœa of weanlings to disappear without any other remedy. For a few years weaned foals have in Trakehnen been given ½ lb. of rice along with their oats, with the idea that the large quantity of phosphorus contained in same would favourably influence the formation of bone. To give a definite result of this is not possible yet. The more potash there is in the food of the foals, and this is particularly so in good grazing and with green Lucerne, the more salt is required by the horses. (This can be demonstrated by a chemical formula.) There ought always to be several large pieces of salt in the mangers.

As long as grazing is possible no difficulty whatever is experienced in giving proper exercise to weaned foals. Grazing in East Prussia, which, unfortunately, only lasts about five months, must be made the best possible

use of, *i.e.*, the foals must remain on the meadows as long as it is light, with a short interval for the mid-day meal, which they should receive in the stables in the form of oats, water, and if required, especially in the autumn, an addition of green Lucerne or clover. On hot summer days this interval may at times be prolonged to about three hours, with green food in the stable. The utmost use of the grazing time also already for weaned foals is, for the breeding of light horses, the most important and potent factor for the production of healthy and capable stock, and yet this is a thing which is very much neglected. The neglect and the final leaving off of grazing represents, in the history of many breeding studs, the turning point in the transfer from a capable breeding stud to one which is contented only with the cheaper production of showy stock. Those economical considerations which have led to the limitation or the abolition of grazing endanger our modern improved breeds in the highest degree. This applies to horses as well as to cattle. The influence of grazing, which is so very great, and which cannot be substituted by anything else, consists principally in the long, regular and slow exercise in the open air on elastic, turfy ground, and under the continuous and beneficial effect of sun, wind and rain. The finest exercising place cannot replace these advantages of grazing, principally because the exercising place lacks the required food-seeking stimulus necessary for the said regular exercise. The healthy and useful feeding on the pasture is only of second importance.

In winter, when there is plenty of snow, exercise may take place in the same pastures. In our climate it is in the spring and autumn that the difficulty of regular exercise is experienced, as of course the pastures must be spared at these times. Horses have then to be exercised on the paved grounds, perhaps covered over with straw, railed in and circular, or if it is not possible to get exercise on such places on account of the ice or because the ground is frozen, etc., horses must be exercised in half-covered circus-formed rooms. This exercise must take place daily, about 1½ to 2 hours in the morning and a little less in the afternoon, if possible with shepherds' horses, in order to get the regular trotting exercise. The regular exercise of weaned foals, as well as of older horses, whether on the pastures in the summer, or on the covered or uncovered exercising places in the winter, is the most important thing in the whole breeding of light horses. This point is often very much sinned against, even in Thoroughbred breeding, especially when horses are to be sold as yearlings. After the finishing of grazing time, weaned Thoroughbred foals and yearlings require a systematic, gradual and progressive course of exercise. This consists in leading them for 1½ hours in the morning, and somewhat less in the afternoon, at a slow pace, and galloping them daily on a railed-in track about 10 metres wide and about 500 metres long. To start with, special leading horses with a man up are useful until the foals learn later on the purpose of it. They then will gallop the distance of about 500 metres without such help.

Whilst the weaned foals are fastened up for dinner, it is the most suitable time to lead them each day on a neighbouring track, till they are quite fit to be handled and are obedient for leading, as well as to place them in a proper position to judge their exterior. This first and very thankful teaching of the young and willing foals should only commence four to six weeks after being weaned. Unfortunately, Thoroughbred foals very seldom get this very useful schooling, because one does not like the trouble, and, moreover, because one under-estimates the great advantages derived from this education. In Half-bred breeding this would be the most opportune time to select those colts for castration which are not suitable for breeding. The earlier they are castrated the easier the foals get over the operation, and the more perfectly do they develop into the desired type of gelding with thin neck and broad croup. It is still more advantageous, in order to get fine geldings, to castrate colts when they are about four weeks old and are still with their dam, as the testicles are then sufficiently prominent. Foals which are early castrated grow out of many exterior faults, such as high-leggedness, narrowness, and even faulty action, often to such a degree that when looking at the horses when four-year-olds, one finds the reason for castrating only from the remarks written about the exterior.

(d) Treatment of the Skin and Hoofs of Weanlings.

To properly look after weaned foals one may reckon twelve to fifteen foals to one attendant. Of course, one man cannot clean fifteen foals properly daily, but that is not necessary, not even in Thoroughbred breeding. I consider it sufficient if each foal is simply rubbed down each day in order to take off the worst dirt. This is best done in the morning whilst they eat their oats, and it requires two to three minutes for each foal. Besides this, each foal must be thoroughly cleaned once a week. For this purpose every disposable attendant is given in the morning or afternoon two to three foals in the stable to clean whilst the rest are being exercised. At the same time he looks after the hoofs and keeps them in order by cutting them properly, rounding them and tarring them once about two or three weeks. The smooth cutting of the frog, and the air-making between the frog and the heels (opening up of the lateral lacunae of the frog), as already stated in connection with sucklings, are continued. In the case of contracted heels, the heel-edges must be cut sufficiently to enable one to draw the hoof scraper through the lateral lacunae of the frog from front to back with ease. The stud attendants must, of course, be specially taught this work, which is not difficult, particularly if the studmaster or manager himself understands it. If this work, however, is given to blacksmiths, who mostly have no real interest in the work and are not always available, the proper keeping of hoofs will never be obtained in the stables. This care of the hoofs takes very little time or trouble, but causes much anxiety, and is of the greatest

importance, especially for Thoroughbreds. From my many years' experience, I can confidently assert that if the hoofs are looked after in the manner stated above, of course a rotten frog is not only made impossible, but strong and resisting hoofs, with correct, broad, full and well-supporting frogs are produced to such a degree as is so much wanted for the racecourse, but which yet are so rarely found. The same order in cleaning and the same care of the hoof is to be applied later for one and two-year-old foals.

In about ten to fifteen per cent. of weaned foals it will be necessary to shoe them from time to time. In the first place, those foals which, on account of their straight pasterns, run too much on their toes, and which are therefore inclined to form upright hoofs, must be shod with half-moon shaped toe-shoes. It is generally sufficient to shoe twice every three or four weeks. Further, on account of some misplacements originating in the womb which have not been quite grown out of (the X-formed position of the fore-legs belongs also to these), or in consequence of standing too wide, together with a yet too narrow chest, or again because of some crookedness in the pastern joint which may still be rectified, some foals are exposed to the danger of wearing their hoofs off obliquely, and thus a proper development is prevented. In such cases I would recommend that the foals be shod according to the well-known rules for faulty standing, and in this manner until they have grown out of the supposed causes of faulty standing, and until there is no longer any fear that they will continue to wear their hoofs off obliquely. In many cases shoeing for three months will be sufficient, often, however, twelve months and even more are necessary; in fact, some never grow right. A twisting round the vertical axle of the leg, originating at the carpus or wrist, the so-called "knee," or higher (not to be mistaken with the X-legged position, which is easier to handle), cannot be improved by shoeing. If these faults are not put right by shoeing, as unfortunately is so often the case in Thoroughbred breeding, which despises the exterior appearance, one will often find that whilst after about twelve months the formerly misplaced pastern, the narrow chest and other faults have been grown out of and become normal, but at the same time during this year an oblique hoof, *i.e.*, contracted heel on one side, has been formed, which it will, of course, now be much more difficult to put right, especially as improvement by shoeing is very dangerous for horses in training. For twistings round a vertical axle, which cannot be put right, it is advisable, in the first years before training, to have a shoe made to suit the particular case, as by this means the early development of an oblique hoof is prevented, or at any rate the tendency to grow oblique is lessened. The following instructions are given to our local stablemen and shoeing smiths for the cutting and shoeing of hoofs in the case of faulty positions:—

Looked at sideways, faulty hoofs may be divided into pointed and blunt hoofs. Pointed hoofs are those of which the long toe is conspicuously

oblique, and the heels too low, and the blunt hoofs are those of which the short toe is conspicuously straight and the heels too high. Pointed hoofs are to be found when horses stand with their legs very much in front of the body, or if the fore-legs are knock-kneed (calf or sheep-kneed), or if the hind-legs are too angular, or if the position of the toes forms an acute angle (in most cases with long or sloping pasterns). If it is desired to favourably influence these faulty positions, the toe-wall of the hoof will have to be kept short. On the other hand, the heels are to be spared as much as possible. Blunt hoofs are found with horses whose fore-legs are placed too far back or are over in the knees, or if the position of the toes forms an obtuse angle (in most cases with short or upright pasterns). In this case cutting of the hoof must be limited for the most part to the too high heels, although in many cases the keeping down of the heel does not effect a remedy. In cases where foals have a lot of exercise on hard, sharp ground, the toe sometimes becomes so worn off that a pronounced upright hoof is produced, and if not dealt with at once it cannot be remedied later, and forms a so-called pincard or ramplin foot, or otherwise ring-bone with its attendant lameness ensues. By a timely use of a toe shoe this affliction may be completely avoided. If it is a question of young foals whose hoofs do not permit of a toe shoe, I would recommend that the toes be hardened by repeated applications of tar, and also that small leather shoes be used. I may here mention that in some rare cases a pincard foot may arise with foals, apparently the consequence of diseased bones and sinews, and this is incurable.

Looked at from the front, the faulty hoofs may be again divided for the sake of simplicity into two groups—group I. hoofs with wide-set toes, and group II. hoofs with narrow-set toes. Hoofs with wide-set toes are more or less pronounced in the following positions: standing wide, X-legged and wide-toed. The hoofs of the second group are found in the following cases: narrow standing, O-legged and narrow-toed.

If it is desired that the foal shall outgrow these faulty positions, the hoofs of group I. must be cut as follows: Repeatedly cut down the outside of the toes, quarters and heels. Cut horizontally so that the sole is, if possible, in the same level with the inferior border of the wall. The sole must therefore be as little arched as possible. Do not shorten the inferior border of the wall on the inside, but from the sole so much horn must be removed, and the inner bar so far shortened (shortened, not weakened) that the sole appears much arched towards the frog. This arching of the sole of the hoof, too narrow at the inside in the case of a wide-set toe, aims at a widening of the hoof on the inside by counter-pressure of the ground.

Group II., hoofs of the narrow-set toes, as far as cutting is concerned, are treated in exactly the opposite manner to group I. The advantages of cutting hoofs with faulty positions can best be learned when foals are exercising on soft, yielding ground. If the exercising ground is rough

and hard the hoof soon wears to the shape necessitated by the position of the legs. In such cases the only thing to counteract this is shoeing. Shoeing should be used not before an age of six months, but usually not before they have reached the age of ten months, except in the case of upright-hoofed suckling foals, when they should be shod earlier. It is, of course, taken for granted that only a first-rate smith, perfectly acquainted with this kind of shoeing, does the work.

The shoe for the hoof of the wide-toed position must be as follows: An outer thin and an inner thick branch, the outer branch tapering towards the end, which should have the thickness of the blade of a knife. The supporting edge of the thick branch is sloped outwards in the region of the quarters and heels. The nail holes in the inner thick branch should be made as far to the front as possible. The thin outside branch, the edge of which must be kept narrow, must be fitted on tight and nailed as far as the end. The inner strong branch must be kept long, and must be fitted on large. The inferior border of the wall on its supporting surface, which slopes outwards, is inclined by each weight to slip outwards, the consequence therefrom being an early recognizable widening of the hoof on the inside.

The hoof of a narrow-standing requires a shoe exactly opposite in make. Of course, the shoe must be changed at the right time, and it is to be noted also that the faulty position cannot be remedied at once by a too strong one-sided cutting down of the inferior border of the wall, nor can it be forced by a too great difference in the strength of the shoe-branches; both things must be done gradually, and slowly increased. It depends on how bad the faulty position is, the shape of the hoof and the results obtained, as to how long the shoeing ought to be continued. As soon as the animal is put to hard work it must be shod with straight shoes, but even then it is advisable when preparing the hoofs for shoeing to see that they retain the breaking of the toe axle produced by artificial shoeing, as well as its regular form, so very laboriously acquired.

The advantages of a proper cutting and good shoeing for the form of the hoof and the position of the legs does not only help the foal to outgrow a faulty position well and quickly, but does more, *i.e.*, instead of an oblique hoof, which is always the consequence of a faulty position, a regular shaped hoof is formed. For example, in the case of wide-set toes, the hoof is very oblique, *i.e.*, the inner walls incline too much to the inside, are low and pushed under, and the whole inner half of the hoof is too narrow.

If these measures are not made use of, these evils will remain, and in most cases this hoof will become later on a one-sided contracted hoof (narrow-heeledness), otherwise it will not be able to overcome quitters, seams, etc., and the value of the horse is accordingly very much reduced. But even this does not exhaust the advantages of the breaking of the toe axle. Horses for whom nothing has been done to remedy their wide-toed position will knock themselves as soon as they are taken in use, and they are useless for

carriage, etc., work. Foals with wide-set toes, whose toe axles by correct shoeing have acquired the desired breaking, very seldom hit their legs when put to work.

Many experts say, and with some justification, that the doubtless unnatural breaking of the toe axle may also cause damage. On the other hand I must state that many experiments in this direction have been made for many years, most likely only at Trakehnen, and they have demonstrated that a slow breaking of the toe axle can be endured by young horses without injury.

If the Lithuanian peasant, or the military horse breeder, a few days before a sale prepares the hoofs in an artificial manner, this ruse has nothing to do with the real methods of improvement, which are very good and useful for horses.

A too sudden break of the toe axle of a three-year-old may be disastrous to young animals owing to the tearing of the ligaments and spraining of the joints, particularly so if the attempts to improve are made by shoeing. The hoof which has been shod does not so easily overcome the sudden breaking of the toe axle as an unshod one does, as the wearing off of the too high bearing part of the unshod hoof is better accomplished, and consequently no damage arises from the breaking of the toe axle.

(e) The Treatment of Yearlings and Older Foals.

Treat and feed yearlings up to the beginning of grazing time in the same manner as I have already pointed out for weaned foals. When the grazing is good about 4 to 6 lbs. of oats are sufficient for military and other horses in use. For breeding material, about 6 to 8 lbs. of oats, with a simultaneous addition of green clover or Lucerne, is required. Thoroughbred yearlings require 10 to 12 lbs. of oats, and in addition green Lucerne. Half-bred yearlings which are given when grazing more than 6 to 8 lbs. of oats will eat less clover or Lucerne, and will therefore not become so strong. In some instances, as for example, where foals are growing fast, or do not feed well, a special addition of 3 to 6 lbs. of oats may be advisable.

After the grazing period, Half-bred yearlings destined for use are given about 6 lbs. of oats and 12 lbs. of hay. Horses destined for breeding stock are given about 8 lbs. of oats and 15 lbs. of clover or Lucerne. Thoroughbred yearlings should be broken in during grazing time late in the summer (about 1½ hours daily), and in autumn after finishing the best grazing they should be turned into training for racing.

In the case of two-year-olds, those bred for use receive during grazing time 2 lbs. of oats (early in the morning), or if grazing is good no oats; and those required for breeding stock about 4 to 6 lbs. of oats, and in both cases green Lucerne or clover in addition. If Lucerne is very good and plentiful, 4 lbs. of oats are quite sufficient; more would be detrimental, as it would

cause fattening. When autumn grazing is finished, the breeding material, colts as well as fillies, should be saddled and trained. At Trakehnen we give two and three-year-old colts and fillies in training about 9 to 12 lbs. of oats. After grazing is finished 6 lbs. of oats and about 12 lbs. of hay is sufficient for two-year-olds intended for use. In the following summer the three-year-olds at Trakehnen get during grazing time 2 lbs. of oats, but if grazing is very good none. When grazing is finished the three-year-olds are broken in, and get until the spring auction 9 lbs. of oats and about 10 to 12 lbs. of hay.

The above indicated food rations are only sufficient if the quality, especially of the hay, is very good. In damp years the hay is less nourishing, and it is then advisable to increase the oat ration. On the other hand, the beneficial and bone-forming qualities of hay well got in dry years may be used in more plentiful quantities at the expense of the oat ration.

A part of the oat ration can be replaced by beans or peas, say about 2 lbs. daily. By this means the formation of the bones is favoured, but at the same time the disagreeable gall formation appears, especially in the hocks. Beans and peas can therefore only be recommended when foals have at the same time plenty of exercise.

Every expert will know, of course, that these rations, which are ordinarily speaking used at Trakehnen, must very often be modified according to the soil of the stud and the particular requirements of individual horses. A fixed standard to suit all the different conditions—harvests, illnesses, etc.—cannot be given. The eye of the breeder, especially when it works with pleasure, will itself perceive all the necessary shades in the treatment of foals.

CHAPTER III.

Training.

I have already mentioned in previous chapters the importance of individualisation in the treatment of both breeding material and foals. It is quite evident that when training horses, whether for the purpose of racing or hunting or other performances, it is most important to individualise, and it is therefore impossible to give a hard and fast rule. I only intend to give general points of view, ideas and experiences, from which each individual breeder must build up his own theory according to the particular requirements of his available material, the training track and climate, etc. The difficulty of the art of training lies in the fact that its object, the horse, like all other living creatures, is endowed with many powerful characteristics, rendering a machine-like and uniform treatment impossible. If the horse were a machine, then training would not be an art, and racing tests to the lifeless clock time would be all that would be required. Furthermore, the work of the trainer is made difficult by the task of having to obtain the highest possible degree of fitness by a fixed time, *i.e.*, the race day. The object of all training consists in removing all superfluous fat and connective tissues, in strengthening the muscles and sinews, and in clearing the wind. In order to obtain this result the horses must be watched carefully and correctly every day and properly dealt with. The trainer's eye is the cause of horses being fit or unfit.

The suitable English and Irish soil, as well as the admirable racing tracks—given by the grace of God—especially at Newmarket, has led the Englishmen also in this branch into the comfortable and tenacious conservatism which is just as dangerous and hostile to all progress as was the former conservatism of artillerymen with reference to breech-loaders not invented by them. It has taken a long time before the simplest doctrines of hygiene could remove much of the evil in English training. The distinct successes of the Americans in training and riding during the course of the last ten years have caused Englishmen to think and reform where necessary. In both training and riding, Americans, who are not bound down by tradition,

and who are not spoiled by English pastures and galloping grounds, obtained great successes through their practical ideas and almost inconsiderate leaning to what is natural. Moreover, the Americans have reason to be proud of the fact that Old England, with its long history of classical races, has had to learn such a rough lesson from them!

(a) The Training Methods.

The training methods of the eighteenth century, that is, at the time of Eclipse, born 1st April, 1764, had to adapt themselves to the following circumstances:—

1. There were only a few attainable racecourses for each horse, and the racing season was much shorter than it is to-day, often only three months.
2. In most cases only four-year-old and older horses ran. Three-year-olds only since 1756, and two-year-olds only since 1773.
3. There were no railways, and consequently the visiting of the different racecourses entailed long journeys on foot.
4. Most races were run for a distance of 2 to 4 English miles, with heats, the weights for six-year-olds being 12 stone.

At that time it was very usual to keep horses in training for only three to four months, and to send them for the rest of the time to grass. After the grazing, training began with weekly physics and bleedings. Then the horse received about two sweating gallops weekly, over distances of 2 to 6 English miles. During the sweating gallops with woollen rugs, some parts of the body which had too much flesh very often—for example, the neck—were covered with extra heavy rugs. In these gallops the last quarter of a mile had to be ridden a little more quick, that means at half speed. After the sweating gallop the nose and mouth were washed, then the horses were brought into the stable or in the so-called rubbing-down house, and there covered with several woollen rugs until the sweat oozed out in sufficient quantities. The sweat was then removed with a sweating knife, and the horse rubbed dry by four persons with woollen cloths, then covered with fresh rugs and given walking exercise for half an hour. Some days a week complete rest days were usual, whilst long walking exercise, as is common to-day, was almost unknown. The usual daily canter or gallop was over 2 to 4 English miles, often without a leading horse, and in any case at a slower pace than is usual to-day. The word "canter," meaning a quiet gallop, arises from the slow manner in which the pilgrims walked to the grave of Archbishop Thomas Becket at Canterbury, murdered 1170.

The development of training in the last century, after the coming into prominence of the classical races for two and three-year-olds, proceeded as follows:—

1. According to Darvill, at the beginning of the nineteenth century, the following sweating gallops were given. For yearlings over 2 miles, for

two-year-olds over 2½ miles, for three-year-olds over 3 to 3½ miles, for four-year-olds over 4 to 4½ miles, and for 5 and 6 year-olds over 5 miles.

2. The sweating gallops gradually became more scarce, and were held over somewhat shorter distances. The sweating gallops of two-year-olds (at the beginning once weekly, over 1 English mile) gradually ceased altogether.

3. Sweating gallops at the beginning of the nineteenth century were given in addition to the daily work, *i.e.*, in addition to the quick work or so-called gallop. Later on there was no quick gallop on the days of the sweating gallops.

4. Opening medicines, called physics, became more rare, and are finally limited to one or two doses a year, especially in spring, shortly before the beginning of quicker work, *i.e.*, beginning as they are transferred from the straw-bed to the racecourse.

5. The daily work consisted of 1½ to 2 hours in the morning, and about 1 hour in the afternoon. This afternoon work, however, does not seem to have been generally practised, and ceases almost everywhere towards the end of the nineteenth century.

6. The work in the forenoon for the two-year-olds consisted of a short walk and trot, then two quiet canters of about 1,000 metres, and then a somewhat quicker canter of about 1,200 metres, the latter once or twice weekly, at full or half speed. The older horses cantered and galloped just as often, but over longer distances. The distance was gradually increased to the distance of the racecourse, *i.e.*, extending eventually over 4 miles, equal to 6,437 metres. In Autumn the yearlings cantered two or three times daily, each time 600 to 800 metres, and in the late autumn were tried up to 800 metres with the assistance of an older leading horse. The afternoon work consisted only in walking and a little trotting.

7. About the second half of the nineteenth century the work of the yearlings and of the two and three-year-olds was limited to two canters daily, of which the second canter was somewhat longer and quicker. Once or twice weekly the second canter was made almost at racing pace, in accordance with the progressive condition. The three-year-old and older horses cantered generally about 1 English mile, seldom more than 2,000 metres. Derby horses, for example, galloped at least two or three times before the race 1½ miles, equal to 2,414 metres, at full racing speed. Gallops over longer distances than 1½ English miles gradually cease altogether, even in the case of horses, for example, which were trained for the Doncaster St. Leger (distance 1 mile, 6 furlongs, 132 yards, equal to 2,937 metres).

The present day views on training are characterised as follows:—

1. Sweating gallops and physics are only applied in exceptional cases when the condition of the legs does not permit that quantity of work by which the useless fat and flesh, called in German luder, can be removed, and yet at the same time muscle can be formed. Further physics are given if a horse, in consequence of too much work, has become stale or has broken

down, so that during the time of its enforced rest it may not put on too much flesh. If a broken down horse has to be blistered or fired, it is given a pill before and after the rest of four to six weeks. Where needed it is also given a physic about eight days before the race when some slight accident to a fit horse requires an important reduction of work.

2. The daily work consists in the morning of 1½ to 2¼ hours' walking exercise, none or very little trotting, and two canters or gallops. In the afternoon ¾ to 1 hour's walking exercise, either led or with a man up. After the beginning of the fast work, it is calculated that under normal conditions about six weeks are sufficient to make the horse fit for racing up to 1¼ English miles, equal to 2,000 metres; whilst at least two months are required if the distance is 1½ English miles, equal to 2,400 metres.

3. In the case of the two daily canters or gallops, the last 500 to 800 metres (or as some trainers say, the last 300 to 600 metres) should, according to the American idea, be done at medium pace, and in the case of a more advanced condition at racing pace, at first only in the second canter, later on in both. The beginning of this gallop in any case must be done at such a slow pace that one can trot alongside. This slow part of the canter may be accordingly extended up to 2,000 to 3,000 metres. Once or twice weekly, in the case of more advanced condition, the quick part of the second gallop may be extended up to 1,200 to 1,600 metres, later on up to at the most 2,000 metres, when, of course, the slow part can be very much reduced, or omitted altogether. Only few trainers are of the opinion that the gallop at racing pace may be extended up to 2,400 metres.

The idea which underlies this kind of training is that the daily gallops over short distances, at a medium or at racing pace, bring the muscles which are used for quicker work, and the lungs, better and more surely into condition than the former usual longer gallops, undertaken once or twice weekly, for which the horses were not sufficiently prepared, as the other daily work was only slow cantering.

The new method of training is supposed to effect a daily, uninterrupted and gradual improvement of condition, whilst formerly, according to the doctrine of the old trainers, every two steps forward should be counteracted by one in the opposite direction. Moreover, experience has taught that gallops at racing pace for longer distances than about 2,000 metres do not improve the condition, but rather the reverse. The winner of the St. Leger, 1906, Troutbeck, has, as I have been assured by his trainer, W. Waugh, never during the whole of his existence galloped or cantered over a longer distance than 2,000 metres. On the other hand, the American trainer, Walker, who gets perhaps the most out of his horses, gave his Derby candidate, Fels, several gallops at racing pace over 2,400 metres, sometimes even with relay leading horses. But even this trainer is of opinion that this distance is the extreme limit, and is even sufficient, for example, for the preparation of the Grand Prix, which is run over a distance of 3,000 metres.

In the bigger and better American racing stables, one often finds the practical arrangement of using one part of the stablemen for riding only, whilst the greater part is employed in cleaning, feeding and leading the horses. A racing stable of about 30 horses not far from New York, had, for example, only two stable boys who could ride. Besides these, the stable jockey also rode. The cleaning and feeding of the horses, as well as taking them to their daily work on the racecourse, and in the afternoon generally to the yard, was undertaken by about eight to ten young fellows who, however, never were allowed to ride. By this arrangement the two stable lads had plenty of opportunity to practise galloping, as they galloped each of their about 7 horses twice daily. It is principally owing to this very practical division of work that the Americans are in the position to produce so many good jockeys. Some of them even learn to accomplish fairly accurately the very difficult task of doing a gallop whilst training at a certain defined pace (eventually 1 mile in about 1 min. 50 secs.). In American training such tasks are very popular. The most difficult task, however, is to ride definite distances in the shortest possible time. The partisans of racing against time do not recognise, in my opinion, sufficiently the difficulties attached to same. They think that in our racing to a finish the art of the jockey in riding is more important than the capacity of riding in the shortest possible time. If the horse were a mere machine it would be an easy thing to get the best record by letting it go full speed ahead from start to finish. With living horses, however, the best record would certainly not be obtained by this method.

For steeplechasing the same kind of training is also recommended, except that instead of galloping them once or twice weekly over 1,200 to 1,600 metres as recommended, they are more often given a hunting gallop, over obstacles, for 3,000 to 5,000 metres. Many trainers assume that if a horse is fit to gallop 1,600 metres on the flat, and if it has had sufficient practice in jumping, it is also fit to do 5,000 metres and more at a steeplechase pace, and that finally at the finish it can still put on the required well-prepared speed which it has not used up whilst going at a steeplechase pace.

Experience has furthermore taught that short quick gallops are less dangerous for the legs than longer canters, provided that the horses do not need to stretch themselves in these quick gallops. In these longer canters energy and a desire for going soon disappear, consequently the absence of strained nerves and muscles causes the sinews to break down easily or the legs to become splints. If this long canter is over obstacles it causes excitement, attention and the desire for going, which are so useful and so necessary in training. Lazy horses, as well as fillies in heat, often gallop with loose joints, and therefore often break down very easily. A change in the galloping track is in this respect often very useful, as it serves to increase the attention of the horses, and removes the so dangerous weariness. One of the most important instructions given to the stable boys is: In your daily

canters or gallops be very careful to avoid pushing your horse. Sit still, so that the horse may feel and think that the rider really wishes to go a little more slowly. This soothing belief sustains the desire for going, and strengthens the nerves of the horses.

Besides a horse's galloping performances, there are several other very remarkable signs to show how far its condition has improved. To commence with, notice must be taken how long it takes the horse to snort (clear the wind) after it has been pulled up. The sooner this happens the more forward is its condition, especially the breathing. If the horse, for example, requires a minute or more to snort, it is a sure sign that the horse has been asked to do too much in the gallop in question, *i.e.*, a mistake has been made. If the horse is very fit and the gallop has been too short, *i.e.*, it has been easy work for it, it takes a long time to snort, or it does not snort at all. The length and pace of the gallop must fit the condition, so that if it clears the wind by snorting 10 to 30 seconds after being pulled up, it is a sure sign that everything is all right.

In the case of a horse which is fit the skin becomes thinner, the hair more shiny, and the flesh firmer. The latter, as well as the disappearance of useless fat, can best be noticed at the mane and on the ribs. A little easy sweating is by no means a sign of bad condition, on the contrary, a fit horse certainly sweats less but more readily, as its sweat is more liquid and its skin thinner and more readily penetrated. The sweat of a fit horse looks like clear water; on the other hand, that of an unfit one like lather, which can be most distinctly seen between the hind legs, and dries up less quickly.

If the horse when galloping begins to become long, or to breathe more deeply, pressing the knees of the jockey outwards, it is a sign for the jockey to pull up.

Finally, I must add that before the race, and in order to get a perfect condition, in most cases several gallops at full speed, over not more than 2,000 metres, are required, and that the last quick gallop—which often works wonders—must be undertaken two or three days before race day. Of course, even after this last gallop the horse must do its usual two canters daily up to the day of the race. On the day of the race itself, early in the morning, give the horse 1 to 1½ hours' walking exercise, a short canter of 800 metres, and a so-called sprint for the same distance. If desired, you can do as the Americans like to—let the sprint follow the canter without any interval. About five hours before the race give the horse some oats with a little water. An hour before racing lead the horse out of the stable.

The following points may be briefly mentioned with reference to the important treatment of horses' legs when in training:—

1. As long as the legs give no cause for anxiety bandages must not be made use of, except for steeplechasers as a protection against external injuries when jumping, and when only this protection seems necessary.

Bandages only then fulfil their purpose when they are carefully wound and fastened round the right place. The rule is to cord somewhat loosely but wind round rather firmly, and in such a manner that it is easy to put one finger between the bandage and the leg. It must be corded about two inches below the upper edge of the bandage, so that the strings of the bandage lie even and only on one place.

2. This leg which is causing anxiety is generally discovered in the well-known afternoon cleaning and revision hour, and it is then first of all necessary to find out whether a changing of the shoeing is required. It will very often be found that the heels have been shortened too much, and in all probability this has been the chief cause for the beginning of the break down. In such a case new shoes with thick branches must be got at once. The straighter position of the pasterns, which often takes place when training, requires the heels to be lifted slightly.

3. As soon as the sinews give way when working, it is necessary to begin the well-known treatment of stitched-on stockings, wet bandages, cold douches, blistering and firing, according to the stage of the disease. More effective, however, than all these remedies is supposed to be the Hydro-thermoregulator, System Ullman (see Archiv. fur wissenschaftlich. und prakt. Tierheilkunde, Vol. 31, page 196). Thick sinews, and especially fresh breakdowns, are exposed by this apparatus for 30 to 50 hours to a temperature of 50 to 55 deg. C. Professor Eberlein says that by this treatment a complete reformation and thus a cure of the break down is possible.

4. Besides the break down of the sinews (apart from about 50 per cent. of all lameness produced by hoof diseases), lameness frequently occurs through splint-exostosis. This exostosis is never or very rarely caused from external injury, such as by knocking or striking by the other leg, but it arises from the tearing of the ligaments by which the splint bones are connected to their cannon bone. This tearing of the ligaments is caused when galloping during training by the shock, which increases in proportion to the speed, when galloping. Even when doing slow work, however, exostosis may arise from sudden and irregular effort of the upper parts of the splint bones, which may be caused in various ways (laziness, heat, neglect). In the case of lameness thus arising, exostosis itself is, of course, not yet existing, and therefore not yet to be perceived. If exostosis is apparent, the lameness has often already passed away. In order to prevent or to limit as much as possible an interruption of the training, it is necessary to exercise a permanent pressure on the splint bones by careful bandaging. After riding, it is advisable for the remainder of the day to apply wet bandages with dry ones over them, and to change them at three hours' interval. For riding, and of course during the night, apply only dry bandages. When the place where the splint-exostosis arises is already to be recognised, place a piece of lead about the size of a two-shilling piece into the bandage, so that it exer-

cises the necessary pressure. Perhaps also in the case of splint-exostosis the application of the Hydrothermoregulator might be useful. There are good racehorses which, on account of exostosis caused whilst training and not looked to at the proper time, could never be properly trained for the whole of the season. Sperber's brother is a well-known example of this.

(b) Stable Regulation and Instruction for Rubbing Down Horses.

Work in the stable begins in the morning about 1½ to 2 hours before the horses are taken out. The first thing to be done is to give the horses water and a little oats, clean the stable, and rub each horse down, after which the men go to breakfast and put on their riding clothes. On their return from the training track, the horses are to be regularly attended to in the following manner:—

1. Remove the snaffle, take off the saddle and put same on the cleaning bench, put on the horses' halters, and if necessary fasten them up. The stable boy then commences to wipe the place where the saddle has been with a straw wisp, and with the same straw wisp removes the greater part of the dirt from the belly and legs, etc., the horses in the meantime eating the hay, or in the summer, the fresh Lucerne, which must be there ready for them in the manger. If the horses are under rugs, after the completion of the above work, cover them up again, and in such a manner that the inside of the rug comes on the top.

2. The next work is the treatment of the legs and hoofs. The bandages are taken off, and all the four legs, beginning with the near fore, are thoroughly cleaned, if required, washed or douched, and then again rubbed dry. When cleaning or drying the legs, the stable boy must kneel down and take firm hold of the leg of the horse from the front. The hoofs are now washed, rubbed dry and filled inside with damp clay. If the hoofs are not washed it is unnecessary to put damp clay on the frog and sole, as the soil which adheres to them is sufficient protection against the stable urine and against over-drying of the hoofs. The hoofs must be washed once a week at least, but as above-mentioned, damp clay must always be smeared in the sole. The blacking of hoofs is not required, and is often dangerous. If more is desired for the decoration as well as for the preservation of the hoofs, the outer part of the hoof can be well brushed daily and wiped with a wool cloth in order to make them smooth and shiny. When above has been done, the legs must, when required, be rubbed with fluid and bandaged. Then give the horse half a bucket of water to drink.

3. The real process of cleaning the horse begins with the head and ears, care being taken that the horses keep their heads low. Take the rug off partly or altogether, brush first the left, and then the right side, always commencing with the neck and shoulders. Then massage the horse with a somewhat

damp wisp consisting of hay and bast, then wipe with a woollen cloth. Beat the dust well out of the rugs, put them on again, and put on the girth, then once more clean the tail and mane. Finally wipe the eyes, nose, mouth and backside with a soft sponge, and the horse's toilet is complete. The halter is then taken off, the horse bedded and given sufficient water. The saddle and harness are then cleaned and put away in the harness room.

An hour after coming home the horses are given their chief feed of oats, the stable shut, and if necessary in the summer on account of flies and heat, darkened. The horses must now have four hours' rest up to the afternoon stabling time, when the legs are first examined and the appetite controlled. They are then got ready for their afternoon's exercise of about three-quarters of an hour, after which they are again cleaned, given water and oats. This is the time when visitors may be received to inspect the stables, and the work for the next day considered. In the evening give water once again, as well as oats and hay. In the long hot summer days, especially with us in the North, it is advisable to work very early, and to arrange for five feeding times instead of four. The above-mentioned stable rest of four hours would then be after the third feed of oats. In this case the five feeds would be about as follows:—

4 o'clock a.m.	about	1 lb.
9 ,, ,,	,,	3 ,,
12 noon	,,	3 ,,
5 o'clock p.m.	,,	2 ,,
8 ,, ,,	,,	3 ,,

(c) Food whilst Training.

For horses in training for racing about 12 to 15 lbs. of oats will be, on an average, sufficient for one day. Very few horses in training eat more than 16 lbs. of oats daily for long, and I consider it inadvisable, except in rare instances, especially where horses will not eat hay, for horses to receive more than this quantity, as there might easily be a relapse, when they will scarcely eat 10 lbs. Horses which have sufficient time and rest for eating, as for example, racehorses, as opposed to farm horses, digest their oats better without chaff. If it is desired to give chaff, however, I would advise the use of Lucerne or Sainfoin hay. Part of the oats, about 2 to 4 lbs., may be replaced by the same quantity of peas or beans, especially if horses in quick work lose their appetite. I find it more practical to give the peas unground and unswollen, as most horses prefer them like that, and as the peas or beans which have not been ground remove the tartar from the teeth, and do not get dirty so easily. An addition of about 2 litres of wheat bran twice weekly, damped a little, with oats (mash), is recommended, especially after the quicker gallops; in any case, not the day before. During the hairing season I recommend that there be added to this so-called

mash a little slime of linseed, or about ½ lb. of ground or roasted linseed. Formerly the portion of hay was fixed in England as 5 lbs. per day maximum, because one wished to get the racehorses more slender after the training than to-day, and they did not think it possible that the horse with more flesh, or even with a so-called hay stomach, could be fit for racing. To-day racehorses in training are given 10 to 12 lbs. of hay daily (but no clover hay), and in addition, after their morning work, a few pounds of green Lucerne as long as it is to be had. Americans have introduced a very good custom, *i.e.*, to put a bucket of water in the stables so that the racehorses can drink whenever they like. Horses in consequence drink oftener, but in quantity less than when they are watered three to four times daily.

Half-bred horses which are not trained for racing but for the improvement of muscle formation, lung activity and health, receive, in order to produce stronger bones, less oats and more hay, especially clover hay. In Trakehnen the two and three-year-old colts in training are given on an average 10 lbs. of oats and 18 lbs. of clover or Lucerne hay, or in summer green Lucerne *ad libitum*, but care must be taken that it is mown twice daily and given to the horses as soon as possible after it has been cut.

CHAPTER IV.

Establishment of Studs.

The Medes were one of the first and most ancient nations which gained great political power in Asia, mostly on account of their good horses and their clever cavalry. Only after allying Medea, which was rich in horses, with Persia, did Cyrus succeed in overcoming the rich Crœsus (549 B.C.), in destroying Babylon (538 B.C.), and in founding a great Persian Empire, whose kings were so fond of horses that they had their celebrated studs for their own use and for that of their cavalry even in the far distant Medea. Victor Hehn supposes that Medea was the home and starting point of the horse breeding and horsemanship for Anterior Asia. Amongst the grasses which improved especially the horse breeding in Medea, the Greeks and Romans found one particularly suitable, and imported this grass about 100 B.C. into Italy under the name of Medic grass, the name "Medicago" arising later. In the fifteenth century this grass was brought first to France and Belgium *via* Spain, and received the name Lucerne from the little Italian town Clauserne; according to other information from the old Spanish word "Userdas." Soon after the discovery of the New World the Spaniards took this Lucerne into America, and called it there by the Arabian word "Alfalfa," later on the Spanish word for clover. Lucerne has only taken root in Germany since the middle of the eighteenth century at Erfurt. Since 1760 Lucerne has been cultivated in England in the fields, and in the sunny East of England (especially in Essex and Kent) very much extended. In 1892 about 6,640 acres grew Lucerne, and in 1906 already about 22,160 acres.

The horse, on account of the simpler organism of its stomach and the shorter intestines, has a much less capacity for digestion than cud-chewing animals. For this reason the horse utilises less hay and straw than cows or sheep. Of all kinds of hay, the horse utilises best Lucerne hay, and excels in this respect even the sheep, according to the experiments of E. Wolff,

Hohenheim, especially as far as the use of the raw protein and digestible carbohydrates is concerned. Therefore, not only the history of horse breeding, and the experiences of the present time, but also scientific considerations, seem to point to the special value of Lucerne for horse breeding.

Medicago sativa, or common Lucerne—named "aspert" by the Persians (*i.e.*, literally forage for horses)—given either green or dried, is the most nourishing and healthiest food for horses, and most suitable to produce strong and hard bones. This grass requires a chalky, strong, deep and warm soil, with deep level of subsoil water, but it also grows well in mountainous districts, where the rain water, coming suddenly and in great quantities, is able to run off well. In the South of France it often grows in the same spot fifteen years and longer. In the middle of Germany about six years; in Trakehnen only three to four years. It can be cut in France five to six times yearly, but in Trakehnen only three times. It thrives better in dry years than in wet years. On account of its roots, which grow 2 to 3 metres deep, it can withstand the greatest scarcity of water. Lucerne thrives best after a crop of vegetables, about 20 lbs. to one acre, sown in oats or barley, and which can be mown green, as long as the Lucerne appears strong enough to suppress weeds. After every crop it is advisable to harrow the Lucerne, and even in special cases to harrow continuously even with the usurpator, in order to destroy the weed. In winter it is easily affected by strong frost, and it is therefore advisable to cut it for the last time in autumn, about two to three weeks before the first night frosts. Manure of 3 cwts. Thomas meal per acre every autumn, as well as 6 cwts. in spring, has been proved to be sufficient at Trakehnen. After Lucerne the best food for horses is Sainfoin (onobrychis sativa maxima). Sainfoin contains a little less chalk than clover, but like Lucerne, it is not injurious to the breathing organs, and is, therefore, more suitable for Thoroughbred breeding than clover. Sainfoin is less capable of resistance than Lucerne. It takes more from the soil, gives only one crop, and is more difficult to get in. According to the tables of E. Wolff, there is contained in every 1,000 part :—

Wood Sorrel . . .	4.7	lime.
Sweet Meadow Hay .	16.6	,,
Sainfoin Hay . . .	16.8	,,
White Clover Hay .	19.3	,,
Red Clover Hay . .	20.0	,,
Lucerne Hay . . .	26.2	,,

There is double the quantity of lime in Lucerne as green food as in red clover, almost three times as much as in meadow grass, and five times as much as in Timothy grass.

The thriving of Lucerne is one of the surest indications that the soil is good for horse breeding, as has been proved in its home to the old Medes

and Persians. Where Lucerne thrives well, it can be taken for granted that there will be found good pasture and meadow land, or that they can be laid out. Good meadows and grazing are amongst the most important conditions for the thriving of horse breeding. Although horses have a great power of resistance against heat and cold, wind and weather, yet there is no doubt that they prosper better in dry and high-lying districts than in damp and low-lying ones, because the food which grows on the former is more nutritive. Moreover, on high-lying plains the lungs of the horses develop better on account of the thinner air, which causes the horse to breathe more often and more deep. The great superiority of that wonderful horse, Ormonde, must partly be ascribed to the high-lying, otherwise rather deficient, training place, Kingsclere. The high-lying training place, Beckhampton, near Calne, in Wiltshire, has proved to be just as good; witness the two Derby winners, Galtee More and Ard Patrick, trained there. The best Arabs are found on the highest-lying plains of Arabia, and probably the first home of the Arabs is the same as that of Lucerne, namely, the mountainous Medea. Admiral Rous writes about the establishment of a stud as follows:—

"The best site for a breeding establishment is undulating ground, on a light soil, over limestone, then over chalk, gravel, sand and loam, well drained; and the worst situation is a rich, wet pasture on stiff clay, which is only fit for cattle and cart horses."

A windy climate is healthier than one which is not windy. The massage of the skin which is effected by the wind strengthens the nerves and improves the health of men as well as of animals. The almost constant wind in East Prussia, and the good loam soil there, on which clover flourishes luxuriantly, are the elements which cause horse breeding to thrive so well in that district, in spite of many other unfavourable conditions, due to its Northern position. The possibility of foals catching cold after heavy rain is much greater in districts where there is not much wind than in districts where there is much wind, as the wind, by drying the hair, is the best protection against colds. Moreover, in districts where there is not much wind it is very difficult to get hay really dried by the wind, especially Lucerne and clover, without diminishing the nutritive power. To sum up, a chalky soil and a windy climate produce good and strong nerves, and they in their turn produce health, courage and beauty, in both men and horses!

The noble horse, it is true, acclimatises itself easily, and may be used and bred all over the world, and yet a keen observer must confess that it prospers, and is better in every respect on a soil similar to the one just described. Although the influence of the soil is generally recognised, and every practical breeder can see it every year in his own as well as in his neighbour's case, yet breeders who are not living on favourable soil admit it very unwillingly, and often deceive themselves. I have often heard East Prussian breeders say: "Why cannot I breed Hunters here in East Prussia just as well as they do in Ireland?" The influence of the soil is,

however, much greater than even experienced breeders believe. If we were even to import into East Prussia the finest food from Medea, yet we could never import two very important conditions for breeding good Hunters—firstly, a grazing period lasting at best longer than five months; secondly, the splendid galloping country on which three-year-old Hunters carrying small apprentices gallop behind the hounds, over walls and obstacles, and even are able to gallop through the whole of the winter! If we, on the other hand, look at the difficulties which the East Prussian breeder experiences in giving his horses the required exercise for seven or eight winter months, one can well understand, from this standpoint alone, the very great importance of the soil.

The United Kingdom (England and Ireland) undoubtedly possesses the best soil for breeding horses. Perhaps, as is often said, the English fogs which are so frequent, caused by the sea, are the cause of more roarers being found there than in other breeding districts. Without this fog, however, the meadows, and especially the galloping tracks, would not be so good as they are in this country and nowhere else in the world. Besides, the oceanic climate of England favours the specially high proportion of amid in the horse forage, and as according to the latest researches of Dr. W. Völtz, amid combinations are especially useful for the building up of firm bones and muscles, consequently the oceanic climate of England seems to be specially favourable for horse breeding. In the less sunny Western part of England, the plants contain more amid, whilst in the more sunny East, as already mentioned, Lucerne thrives better.

France is behind England in this respect, and in America the ground cannot stand being galloped on, and for that reason all races are run on artificial Macadam courses. The consequence of these advantages of the English soil is that the English reared and trained Thoroughbred is far superior to all other Thoroughbreds, by reason of the elasticity of its galloping and its high quality. This blood, which produces wonders, is to be had most surely in England. The other Thoroughbreds have not shown as yet that they can make progress, or even remain at their height, without continuous borrowing from England. England, on the other hand, in spite of the yearly growing export of good and the best breeding material, has retained its power. The danger to this horse country, endowed with the Grace of God, consists in the increasing neglect which, by reason of all producing wonderful nature, has rooted itself so often in mankind, as Th. Buckle has shown in his "History of Civilisation in England."

The best soil for the breeding of draft horses is in fertile low-lying and diluvial regions, which, on account of their plentiful and fattening forage, are suitable for producing the desired large and heavy-limbed cold-blood horses. Even the home of the Suffolks in England has the trace of a marshy nature, and more so the Clyde valley, the home of the Clydesdales. It is, however, possible, and may be expected, that the breeding of heavy horses

for performances may require something else from the soil. One of the best examples I know of for the great influence which the soil exercises on the type is the previously mentioned pure draft breeds in the Russian Steppe stud of Derkul. The Percherons grew like Arabs here, and the Suffolks and Clydesdales became stunted, in spite of the splendid forage from the Steppe.

When choosing a ground suitable for a stud for horses, one must further take into consideration that the hay of higher lying meadows (especially mountainous and Alp meadows) is superior as far as taste and nutritive value are concerned. The hay of lower lying valley meadows, and still more that of irrigated meadows and marshes, is, all things being equal, inferior to the hay of higher lying regions, on account of less taste and greater quantity of woody fibres, even if these same grasses should prevail here as well as there. Mostly on higher meadows less weed will be found, and less grasses of inferior value, or even dangerous. I myself consider it improbable that a continuous drought reduces the mineral ingredients of the food, and that a food is produced poor in lime and phosphoric acid, causing diseases of the bones (as Professor Kellner says in his well-known manual, "Die Ernährung der landwirtschaftlichen Nutztiere"). As far as practice is concerned, in dry years one can only complain about a smaller quantity, the quality is always better, and the horses prefer it, and therefore develop much better, in spite of a smaller quantity.

Of all domestic animals, the horse is the most sensitive to bad drinking water. Unclean, surface or stagnant water is the most injurious. Even the vapours arising from stagnant waters are very unhealthy for horses, especially young foals, since they cause an increase of troublesome flies. Continually running water containing lime, which is colourless and without smell, is best for horses. It has often been observed that glanders breaks out in a milder form after the horses are given better water from fresh springs newly bored.

The growth of beeches is generally and rightly considered a favourable sign as regards a good soil for horse breeding. As oaks grow best in wet, low-lying countries, or in countries with much rain, and as such countries are not favourable for horse breeding, the idea has arisen that horses do not prosper where oaks prosper. Oaks grow, nevertheless on high-lying ground, and thrive well on strong clay soil, which is also suitable for horse breeding. On the other hand, limes, especially the small-leaved ones, as well as all kinds of barberries, are undesirable in a stud, because they are the most popular carriers of rust parasites, which are especially unfavourable for Lucerne, and also for clover, as well as other grasses. Furthermore, wheat straw suffers mostly from rust, as in a lesser degree do also oat and barley straw.

Even the best soil requires, in order to derive any benefit from its advantages for breeding good, capable and sound horses, two very important factors, *i.e.*, paddocks and permanent pastures. These remarks are perhaps

superfluous when speaking of two benefited horse breeding countries like England and Ireland. But the method of rearing in the stable without paddocks and permanent pastures, which is still so widespread in Germany for all kinds of breeds, threatens to ruin many breedings. First of all must be mentioned here the breeding of horses. Paddocks and permanent pastures serve, therefore, as a contrast to the method of rearing in the stable, to keep the breeding material as long as possible outside the stable and in conformity with nature, to nourish same. The following advantages thus arise :—

1. *The influence of light.* The recently well recognised beneficial influences of light consist principally in destroying many very dangerous microbes, especially tuberculosis baccili, and in increasing the energy of life by multiplying the red corpusculli and the hæmoglobis. According to the observations of Professor Gaule in Zurich, for example, Polar travellers often suffered more or less from anæmia.

2. *The influence of good air.* The air rich in oxygen in the open is a primary condition of every healthy development. The continuous remaining out in the open increases the need of oxygen, and in order to satisfy their needs, horses must, by deep breathing, make a greater use of their lungs. Accordingly, the lungs will be extended and strengthened, and also the energy of life increased.

3. *The influence of wind and weather.* The constant skin massage by wind and weather strengthens the whole nervous system. As a matter of fact, wind and weather preserves the whole animal organism in a continuous and beneficial training through frequent and sudden changes, and forces it to get accustomed to outside circumstances for the sake of self-preservation. In conjunction with the beneficial influence of light and air, wind and weather, owing to a normal and strengthening development of the nervous system, favour the health in such a good and energetic way altogether impossible if the horses are brought up in the stable.

4. *The influence of exercise.* A voluntary, continuous and mostly slow exercise on the meadows is necessary when seeking their food. By this means the sinews, muscles and bones are under the influence of a favourable slow, continuous and effective training quite impossible outside the meadows. The longer grazing is possible (in East Prussia, unfortunately, five months at the most), and especially night grazing, the more distinctly is to be observed a favourable development of the formation of the body, especially of the shape of the limbs, as well as that so important correct walk. The voluntary desire of the horses to visit distinct parts of the meadow, the possibility of their moving about as they please, and so noticing all that is going on around them, the attention which is required for observing changes, the many chances to caper and play with their companions—all these strengthen the intellect and senses, and are the best and only preventives against timidity.

5. *Food grazing.* The advantages of grazing on the meadow, as against green food in the stable, lie, firstly, in the fact that the horses never get as much in their mouth in the meadow as in the stable, and that, therefore, sudden overloading of the stomach is avoided; secondly, many and just the best and youngest grasses lose their taste between the time of being mowed and eaten; thirdly, the useful combinations of amids are, for the most part, in the younger plants, and these are the most difficult to mow, but the horses whilst on the meadow get them easily.

For the good preservation of pastures it is very important that they should be grazed alternately, as far as possible, by horses, cows or oxen (but not by sheep). Grazing by horses only, continued through many years, seems to produce some peculiarities on the respective pastures which are doubtlessly injurious, but up to the present not yet investigated scientifically. These damaging characters are developed more intensively the longer grazing is able to be extended in the respective countries. The pastures in England and Ireland, for example, suffer much more from continuous grazing by horses alone than pastures in East Prussia, where five to seven months winter, with snow and frost, shortens the grazing season and prevents somewhat the development of these injurious peculiarities. In countries with a short winter and no snow the pastures are especially sensitive to a one-sided use. Who, however, can afford the luxury of manuring his pastures plentifully every year with composts, will suffer little, or not at all, from the above damaging characters.

When preparing the meadows or pastures, it is useful to grow a green crop of potatoes or turnips, on purpose to destroy weeds as radically as possible. The following composition of seeds, mixed with oats or barley as guard-corn, have proved suitable for Trakehnen :—

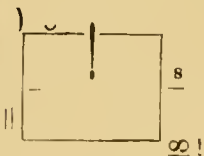
1. For Clayey Soil.

Sow per 1 Morgen = ¼ ha. = 0.63 Acre.

Red clover (Trifolium pratense)	2 lbs.
White or Dutch clover (Trifolium repens)	2 ,,
Cow grass (Trifolium pratense perenne)	3 ,,
Smooth-stalked meadow grass (Poa pratense)	10 ,,
Dogstail (Cynosurus cristatus)	2 ,,
Meadow Fescue (Festuca pratense)	3 ,,
Fiorin or creeping bent grass (Agrostis alba stolonifera) . . .	2 ,,
Cocksfoot grass (Dactylis glomerata)	2 ,,
Timothy grass (Phleum pratense)	2 ,,
Total . .	28 lbs.

2. For a Sandy Soil.

Sow per 1 Morgen=¼ ha.=0.63 Acre.

Red clover (Trifolium pratense)	2 lbs.
White or Dutch clover (Trifolium repens)	2 ,,
Cow grass (Trifolium pratense perenne)	2 ,,
Birdsfoot trefoil (Lotus corniculatus)	2 ,,
Trefoil or yellow clover (Medicago lupulina)	1 ,,
Smooth-stalked meadow grass (Poa pratense)	10 ,,
Meadow Fescue (Festuca pratensis)	2 ,,
Red Fescue (Festuca rubra)	2 ,,
Fiorin grass (Agrostis alba stolonifera)	2 ,,
Dogstail (Cynosurus cristatus)	2 ,,
Cocksfoot grass (Dactylis glomerata)	2 ,,
Timothy grass (Phleum pratense)	1 ,,
Total . .	30 lbs.

To arrange a stud it is necessary to have the stud books corresponding to the breeding aimed at. It is very much to be regretted that in the most studs of England and Ireland these stud books are kept very irregularly and in a loose manner. The import certificates from England do not even state the most important dates, which we mark on each covering and foal certificate, namely, day of birth (not only year of birth), time of pregnancy reckoned from the coverings indicated on the service certificates, colour and marks (not colour alone). The entry of all the coverings with their dates is especially important when several stallions have been used for covering. It is also important to know whether the horse has been a premature birth. A well organised and properly kept stud book can be the storehouse of many and different breeding and also biological problems. For the sake of reference, all coverings should be entered in the stud book, *i.e.*, registers of coverings and foalings, notices of the judging of foals, the whereabouts of same, etc., etc., must be lucidly arranged together to save space, and also for the sake of lucidity special signs for the judgment of foals at different times are practicable. Below I give the model of a stud book introduced at Trakehnen for the last twelve years, with the practically tried signs for the judging of foals. These signs are intended to specially reproduce the exterior peculiarities, which are useful for the immediately following matings, as well as to judge of transmission on the part of the parents and the development of the foals themselves. If, as it appears to me, this stud book introduced at Trakehnen is sufficient for Half-bred breeding, nevertheless,

for other breeds, *i.e.*, for Thoroughbreds or Trotters, special modifications will be necessary. These will consist principally of a lucidly arranged classification of the racing and breeding performances of the family in question, as I have similarly shown on page 290. In addition, short remarks about the development, capability and peculiarities of the foals during the breaking-in, first trials and further trainings, would be very useful, to which it might be advisable to insert special columns.

Stud Book

No. 46. **Isar** born (after 331 d.) 8/1 1897 in Bojohrgallen.

By Elfenbein and Ismir by Malteser and Issy by Djalma — Vindex xx — Reprobate — Y. Emilius xx. Fr. Gener.: 5 Nobleman x, 6 Antenor 72⅝% XX, 8¼% OX.

Colour, Mark, Size: dark brown without special mark. 169/158 cm.

F. *No.* 181 Foundation Mare: Bonne E. H. born Engl. 1784.

Brood Mare Years	Covering		Carrying Time Days	Foaling			Judgment		
	with Stallion	on the		Date	Sex	Name, Colour, Marks	Date	Class	Description
1.	Insurgent	14/1 22/1 9/2 11/2 01	331	16	Filly	Irre	17/1 02	II	
				January		brown	12/5 03	II ?	
				02		Star	15/5 04	II	
2.	Lehnsherr	25/1 02	328	26	Colt 20/8 06 Gelding	Imposant	27/1 03	I	
	Pomp xx	19/2 02		January		dark brown	8/5 04	II a	
				03		St. l. b. past. w.	10/5 05	I	

Formula.

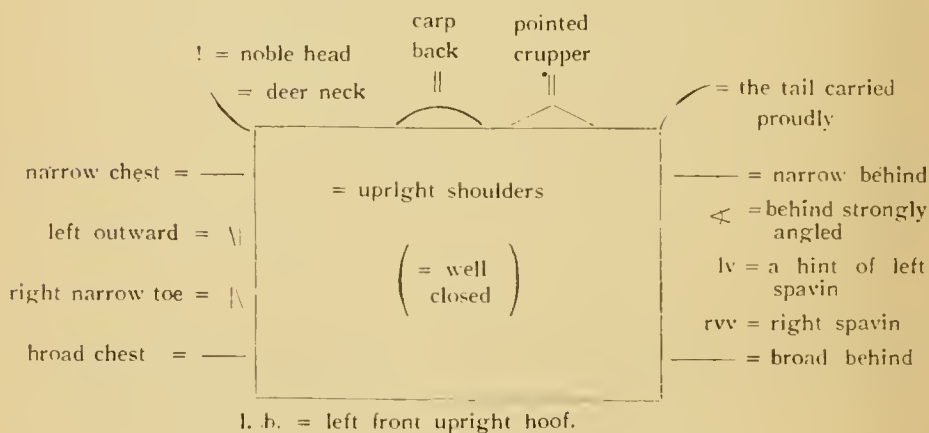
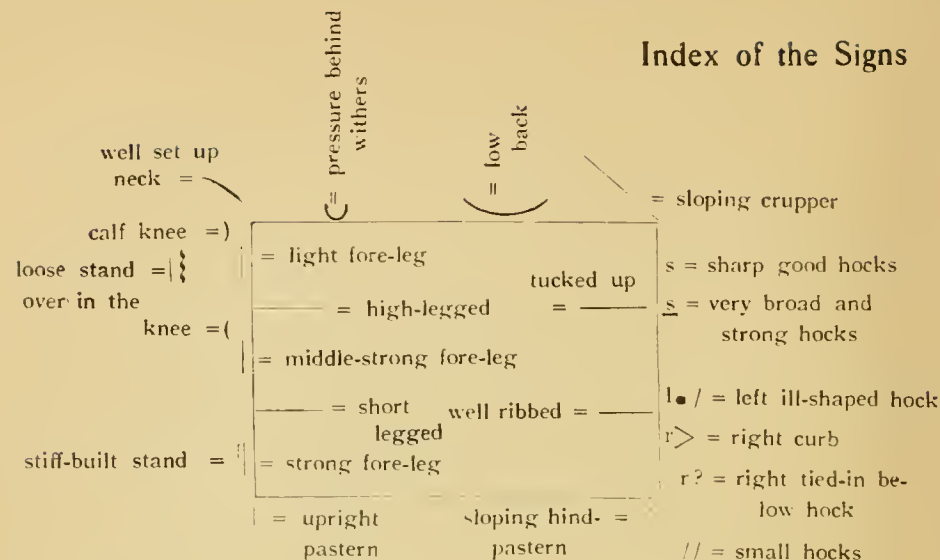
Of the Brood Mare

Diseases	Condition whilst Training	Description and Remarks
Severe glanders when weaned. 3/1 99 l. periodical eye inflammation. 4/3 99 l. blind. 5/4 99 l. h. inflam. swelling; recovered.	2 year old, very idle and slow in the autumn training. 3 year old, farm horse. Excellent temperament. 3 year old, autumn driven.	) ‿ s ‖ ∞ ! nurses very well. Kl. II.a

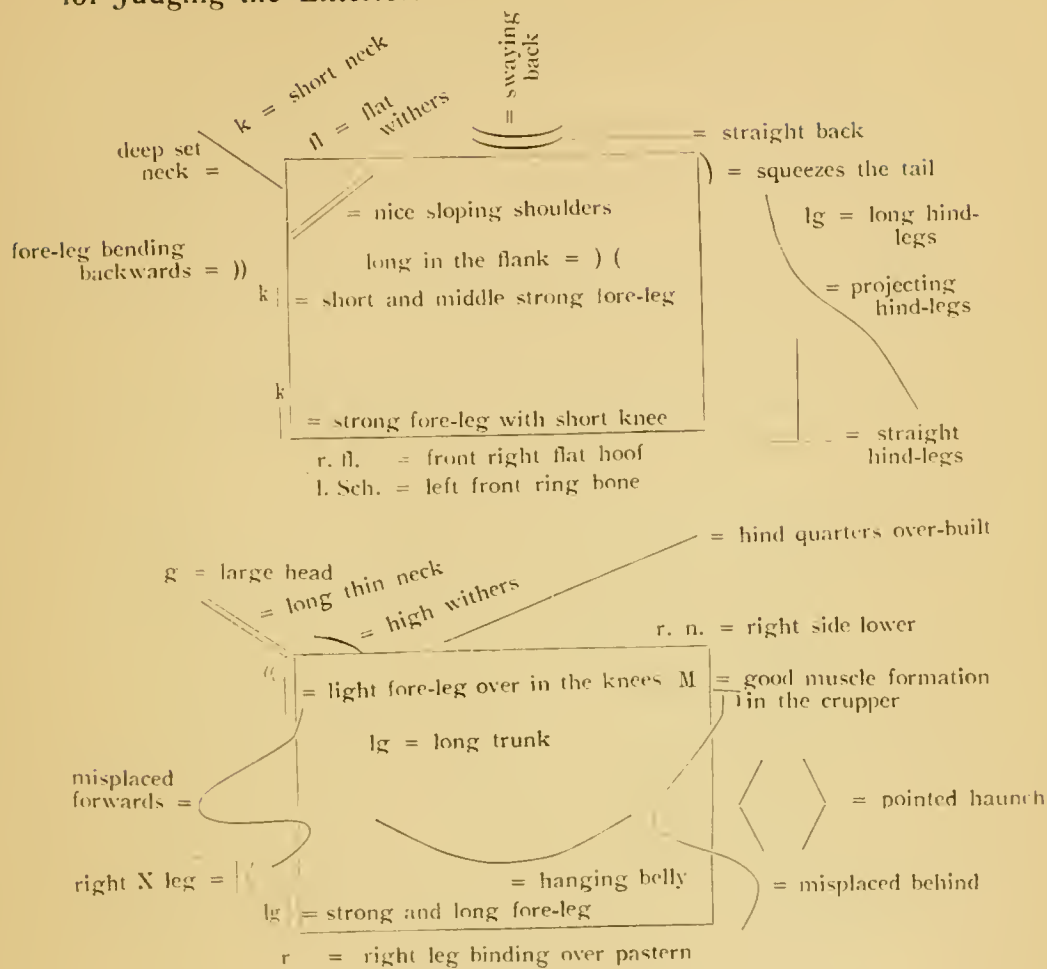
and Development of the Foals.

Diseases	Condition whilst Training	Final Judgment
Slight glanders while suckling. Often colic when weaned. 2/3 04 l. b. inflam. swelling; remedied. 10/8 04 l. b. inflam. swelling; yet 8/11 04 recovered.	Only saddled when 3 year old in the summer as a farm horse, often lame. 3 year old a very good riding horse, always healthy. All illnesses overcome.	Brood Mare. s ‖ ∞ Z. Kl. II. G. Kl. II.a 171/162 cm.
Meconium removed with instruments. Very slight glanders when weaned. 8/6 05 l. b. past. Fissur remedied 11/8 05 crib biter. 1906 often colic.	3 year old farm horse at Mattisch. Excellent temperament. 3 year old ridden in autumn as a hunter. Good jumper.	!!) ‿ ‖ s ∞ Crib biter. 15/4 07 in Aukt. to N. N. 1850 Mark Z. Kl. III. G. Kl. I. 173/164 cm.

Index of the Signs

l. h. = left front upright hoof.

Kl = Class: I.a, I., II.a, II?, III.
Z. Kl = Class for breeding purposes
G. Kl = Class for use purposes
Crib = crib biter
kr. = ill
kz = hip-shot
k = small
k = very small
N = needy being
g = large
c = correct
h = harmonious
w = little

R = large frame
L = joint ill
u = unripe
sch = weak
Gll = gall
! = noble
!! = very noble
a = expressively
tr = lean
/ = common
// = very common
l. A. ● = left eye cataract-spot

for Judging the Exterior.

k = short neck
fl = flat withers
= swaying back
= straight back
deep set neck =
= squeezes the tail
= nice sloping shoulders
lg = long hind-legs
fore-leg bending backwards =))
long in the flank =) (
k = short and middle strong fore-leg
= projecting hind-legs
k = strong fore-leg with short knee
= straight hind-legs
r. fl. = front right flat hoof
l. Sch. = left front ring bone

= hind quarters over-built
g = large head
= long thin neck
= high withers
r. n. = right side lower
= light fore-leg over in the knees
M = good muscle formation in the crupper
lg = long trunk
misplaced forwards =
= pointed haunch
right X leg =
= hanging belly
= misplaced behind
lg = strong and long fore-leg
r = right leg binding over pastern

CHAPTER V.

Tables for comparison of various Measurements.

Linear Measure.

1 Yard in England = 3 Feet	=	0,91 438 m
1 Yard in America	=	0,91 439 ,,
1 Furlong = 220 Yards	=	201,16 ,,
1 Distance = 240 Yards	=	219,5 ,,
1 Mile in England = 8 Furlongs . .	=	1609,31 ,,
1 Mile in America	=	1609,33 ,,
1 Mile in Prussia	=	7532,5 ,,
1 Mile in Hungary	=	8353,6 ,,
1 Mile in Kurland = 7 Versts	=	7467,5 ,,
1 Faden (Saxony) in Russia	=	2,13 356 ,,
1 Verst = 500 Faden	=	1066,78 ,,
1 Faden in Sweden and Finnland . .	=	1,7814 ,,

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1 Inch in Prussia (Rheinland) . . .	=	2,6154 cm
1 Inch in England and Russia . . .	=	2,539 954 ,,
1 Inch in America	=	2,539 977 ,,
8 Inches (English)	=	20 ,,
8½ Inches ,, ...	=	21½ ,,
9 Inches ,, ...	=	22.8 ,,
1 Foot in Prussia (Rheinl.) = 12 Inches	=	31,38 535 ,,
1 Foot in England and Russia = 12 Inches	=	30,47 945 ,,
1 Foot in America = 12 Inches . . .	=	30,47 973 ,,
1 Werschok in Russia	=	4,445 ,,
1 Arschin = 16 Werschok	=	71,1187 ,,

Height Measurement for Horses.

1. In England.

1 Inch = 2,5399 cm, 1 Hand = 4 Inches = 10,1596 cm.

Hands	Inches		cm.	Hands	Inches		cm.	Hands	Inches		cm.
12	—	=	121,9	14	3	=	149,9	17	2	=	177,8
12	1	=	124,5	15	—	=	152,4	17	3	=	180,3
12	2	=	127	15	1	=	154,9	18	—	=	182,9
12	3	=	129,5	15	2	=	157,5	18	1	=	185,4
13	—	=	132,1	15	3	=	160	18	2	=	188
13	1	=	134,6	16	—	=	162,6	18	3	=	190,5
13	2	=	137,2	16	1	=	165,1	19	—	=	193
13	3	=	139,7	16	2	=	167,6	19	1	=	195,6
14	—	=	142,2	16	3	=	170,2	19	2	=	198,1
14	1	=	144,8	17	—	=	172,7	19	3	=	200,7
14	2	=	147,3	17	1	=	175,3				

2. In Germany.

1 Inch = 2,6154 cm, 1 Foot = 12 Inches = 31,38 535 cm.

Feet	Inches		cm.		Hands	Inches		Arschin	Werschok
5	—	=	156,9	=	15	1,8	=	2	3,3
5	1	=	159,5	=	15	2,8	=	2	3,9
5	2	=	162,2	=	15	3,8	=	2	4,5
5	3	=	164,8	=	16	0,9	=	2	5,1
5	4	=	167,4	=	16	1,9	=	2	5,7
5	5	=	170	=	16	2,9	=	2	6,2
5	6	=	172,6	=	17	—	=	2	6,8
5	7	=	175,2	=	17	1	=	2	7,4
5	8	=	177,8	=	17	2	=	2	8
5	9	=	180,5	=	17	3,1	=	2	8,6
5	10	=	183,1	=	18	0,1	=	2	9,1
5	11	=	185,7	=	18	1,1	=	2	9,8
6	—	=	188,3	=	18	2,1	=	2	10,4

3. In Russia.

1 Werschok = 4,445 cm, 1 Arschin = 16 Werschok = 71,1187 cm.

Arschin	Werschok		cm.		Hands	Inches
2	—	=	142,2	=	14	—
2	1	=	146,7	=	14	1,8
2	2	=	151,1	=	14	3,5
2	3	=	155,6	=	15	1,3
2	4	=	160	=	15	3
2	5	=	164,5	=	16	0,8
2	6	=	169	=	16	2,5
2	7	=	173,4	=	17	0,3
2	8	=	177,8	=	17	2
2	9	=	182,2	=	17	3,8
2	10	=	186,7	=	18	1,5

Liquid and Dry Measure.

1 Quart in England = 1,136 Liter, 1 Quart in America = 0,946 Liter.
1 Pint in England = 0,568 Liter, 1 Pint in America = 0,474 Liter.
1 Garnez in Russia = 3,2797 Liter.
1 Liter = 1 Cubicdecimeter.
1 Hektoliter = 100 Liter.
1 Liter of Oats weighs about a Pound = ½ Kilogramm.

Surface Measure.

1 Ar = 100 s.m., 1 Acre = 25,53 ar.
1 Hektar = 100 ar = 3,9166 Acre.
1 Acre in England and America = 40,47 ar = 1,59 Acre.
1 Dessätine in Russia = 1,09 Hektar = 3 Lofstellen in Kurland.

Weights.

1 Pound (lb.) in Germany, Denmark, Switzerland = 500 gr. = ½ Kilogr. 1 lb. in England and America = 453,6 gr. 1 lb. in Russia = 409,5 gr. 1 lb. in Austria Hungary = 560,1 gr. 1 lb. in Sweden = 425,1 gr. 1 Stone in England = 14 English lbs. = 6,35 kg. 1 Pud in Russia = 40 Russian lbs. = 16,38 kg.

Stone	lb.		kg.		Pud	lb.	Stone	lb.		kg.		Pud	lb.
5	—	=	31¾	=	1	37,5	7	—	=	44½	=	2	28,5
5	1	=	32¼	=	1	38,6	7	1	=	45	=	2	29,7
5	2	=	32¾	=	1	39,7	7	2	=	45¼	=	2	30,8
5	3	=	33	=	2	0,9	7	3	=	45¾	=	2	31,9
5	4	=	33½	=	2	2	7	4	=	46¼	=	2	33
5	5	=	34	=	2	3	7	5	=	46¾	=	2	34,1
5	6	=	34½	=	2	4,2	7	6	=	47¼	=	2	35,2
5	7	=	35	=	2	5,3	7	7	=	47¾	=	2	36,3
5	8	=	35½	=	2	6,4	7	8	=	48	=	2	37,4
5	9	=	35¾	=	2	7,5	7	9	=	48½	=	2	38,5
5	10	=	36¼	=	2	8,6	7	10	=	49	=	2	39,6
5	11	=	36¾	=	2	9,7	7	11	=	49½	=	3	0,7
5	12	=	37¼	=	2	10,8	7	12	=	50	=	3	1,8
5	13	=	37¾	=	2	11,9	7	13	=	50¼	=	3	3

Stone	lb.		kg.		Pud	lb.
6	—	=	38	=	2	13
6	1	=	38½	=	2	14,2
6	2	=	39	=	2	15,3
6	3	=	39½	=	2	16,4
6	4	=	40	=	2	17,5
6	5	=	40¼	=	2	18,6
6	6	=	40¾	=	2	19,7
6	7	=	41¼	=	2	20,8
6	8	=	41¾	=	2	21,9
6	9	=	42¼	=	2	23
6	10	=	42¾	=	2	24,1
6	11	=	43	=	2	25,2
6	12	=	43½	=	2	26,3
6	13	=	44	=	2	27,4
9	—	=	57¼	=	3	19,6
9	1	=	57½	=	3	20,7
9	2	=	58	=	3	21,8
9	3	=	58½	=	3	22,9
9	4	=	59	=	3	24
9	5	=	59½	=	3	25,1
9	6	=	59¾	=	3	26,2
9	7	=	60¼	=	3	27,3
9	8	=	60¾	=	3	28,4
9	9	=	61¼	=	3	29,5
9	10	=	61¾	=	3	30,7
9	11	=	62¼	=	3	31,8
9	12	=	62½	=	3	32,9
9	13	=	63	=	3	34
10	—	=	63½	=	3	35,1
10	1	=	64	=	3	36,2
10	2	=	64½	=	3	37,3
10	3	=	64¾	=	3	38,4
10	4	=	65½	=	3	39,5
10	5	=	65¾	=	4	0,6

Stone	lb.		kg.		Pud	lb.
8	—	=	50¾	=	3	4,1
8	1	=	51¼	=	3	5,2
8	2	=	51¾	=	3	6,3
8	3	=	52¼	=	3	7,4
8	4	=	52½	=	3	8,5
8	5	=	53	=	3	9,6
8	6	=	53½	=	3	10,7
8	7	=	54	=	3	11,8
8	8	=	54½	=	3	12,9
8	9	=	55	=	3	14
8	10	=	55¼	=	3	15,1
8	11	=	55¾	=	3	16,3
8	12	=	56¼	=	3	17,4
8	13	=	56¾	=	3	18,5
10	6	=	66¼	=	4	1,7
10	7	=	66¾	=	4	2,8
10	8	=	67¼	=	4	3,9
10	9	=	67½	=	4	5,1
10	10	=	68	=	4	6,2
10	11	=	68½	=	4	7,3
10	12	=	69	=	4	8,4
10	13	=	69½	=	4	9,5
11	—	=	69¾	=	4	10,6
12	—	=	76¼	=	4	26,1
13	—	=	82½	=	5	1,6
14	—	=	89	=	5	17,1
15	—	=	95¼	=	5	32,6
16	—	=	101½	=	6	8,1
17	—	=	108	=	6	23,6
18	—	=	114¼	=	6	39,1
19	—	=	120¾	=	7	14,6

Most Important Distances at Newmarket.

	Mile	Furl.	Yds.		Meter
The Beacon Course (B. C.)	4	1	138	=	6764,6
since 1852	4	1	173	=	6796,6
since 1864	4	1	157	=	6782
since 1865	4	1	143	=	6769,2
since 1889	4	1	177	=	6800,2
Round Course (R. C.)	3	6	93	=	6119,9
since 1819	3	4	187	=	5803,6
since 1852	3	4	139	=	5759,7
since 1889	3	4	138	=	5758,8
Ditch in (D. J.)	2	—	97	=	3307,3
since 1852	2	—	119	=	3327,4
since 1865	2	—	105	=	3314,6
since 1889	2	—	118	=	3326,5
Ankaster Mile (A. M.)	1	—	18	=	1625,8
since 1889	1	—	22	=	1629,4
Two years old Course (2 Y. O. C.) July St. .	—	5	136	=	1130,2
New Two years old Course (on the B. M.)					
since 1888 July St.	—	5	142	=	1135,6
since 1902	—	5	140	=	1133,8
Two years old Course (on the flat) since 1852	—	5	140	=	1133,8
since 1902	—	5	134	=	1128,3
Yearling Course (Y. C.)	—	2	147	=	536,7
since 1853 (on the flat)	—	2	22	=	422,4
since 1854	—	2	52	=	449,9
Cambridgeshire Course (1839)	1	1	156	=	1953,1
Old Cambr. Course since 1843	1	1	20	=	1828,8
New Cambr. Course since 1901	1	1	17	=	1826
since 1902	1	1	—	=	1810,5
Cesarewitch Course (1839)	2	1	215	=	3615,4
since 1852	2	2	28	=	3646,5
since 1889	2	2	35	=	3652,9
since 1902	2	2	—	=	3620,9
Across the Flat (A. F.)	1	2	44	=	2051,9
since 1818	1	2	24	=	2033,6
since 1852	1	2	73	=	2078,4
since 1887	1	2	—	=	2011,6
Dewhurst Pl. Course	—	7	—	=	1408,1
Criterion Course	—	5	182	=	1172,2
since 1865	—	6	—	=	1207
Suffolk St. Course	1	4	2	=	2415,8
since 1889	1	4	25	=	2436,8
since 1902	1	4	—	=	2414

CHAPTER VI.

Tables showing the Ancestors of Thoroughbreds
in the Male Line.

DARLEY ARABIAN 1702

Brisk 1711	*Foxhunter* 1727	*Moses* 1746	*Otho* 1760
D. by Jigg	D. by Basto	D. by Porland Arabian	D. by Cade
Aleppo 1711	*Hobgoblin* 1724	*Shakespeare* 1745	*? Eclipse* 1764
D. by Hautboy	D. by Old Careless	D. by Bartl. Childers	D. by Regulus
	Second 1732		
	D. by Basto		
Flying Childers 1715	**Blaze** 1733 (Foundation Sire of Hakneys & Norfolk Trotter)	**Sampson** 1745	**Engineer** 1755
D. by Old Careless	D. by Grey Grantham	D. by Hip	D. by Greyhounc
	Roundhead 1733	*Jolly Roger* 1741	*Bay Malton* 1760
	D. by Bald Galloway	D. by Partner	D. by Cade
	Snip 1736	*Snap* 1750	*Goldfinder* 1764
	D. by Basto	D. by Fox	D. by Blank
			Sweet William 17
		Syphon 1750	D. by Cade
		D. by Partner	*Sweetbriar* 1769
			D. by Shakespea
			Tandem 1773
			D. by Regulus
Bartlet's Childers about 1716	**Squirt** 1732		
D. by Old Careless	D. by Snake		
			Eclipse 1764
			D. by Regulus
Bulle Rock 1718			
D. by Byerly Turk			
		Marske 1750	
		D. by Blacklegs	
			Stripling 1765
			D. by Cade
			Y. Marske 1771
			D. by Blank
			Shark 1771
			D. by Snap

Coxcomb 1771			
D. by Babraham			
Dorimant 1772			
D. by Babraham			
Mambrino 1768	*Messenger* 1780 (Foundation sire of the Amer. Trotters)		*Hambletonian* 1803
D. by Cade	D. by Turf		D. by Shark
Doctor 1776			
D. by Sedley Arabian			
Chocolate 1777	*Jerry Sneak* 1796		
D. by Bandy	D. by Trunnion		
Javelin 1772	*Coriander* 1786	*Hyacinthus* 1797	
D. by Spectator	D. by Herod	D. by Phoenomenon	
	Asparagus 1787	*Teddy the Grinder* 1798	
	D. by Justice	D. by Highflyer	
	Alderman 1787	*Waxy Pope* 1806	*Starch* 1819
	D. by Squirrel	D. by Highflyer	D. by Shuttle
Pot8os 1773	**Waxy** 1790	**Whalebone** 1807 see Table II.	
D. by Warrens Sportsman	D. by Herod	D. by Trumpator	
Jupiter 1774	*Champion* 1797	*Wofful* 1809	
D. by Tartar	D. by Highflyer	D. by Trumpator	
	Overton 1788	**Whisker** 1812 see Table III.	
	D. by Herod	D. by Trumpator	
King Fergus 1775	**Beningbrough** 1791 see Table IV.		
D. by Black and all Black	D. by Herod		
Boudrow 1777	**Hambletonian** 1792 see Table V.		
D. by Sweeper	D. by Highflyer		
	Precipitate 1787	*Bobtail* 1795	
	D. by Herod	D. by Eclipse	
		Golumpus 1802 see Table VI.	
		D. by Woodpecker	
Mercury 1778		*Cerberus* 1802	
D. by Tartar		D. by Herod	
		Hedley 1803	
Hall's Eclipse 1778	**Gohanna** 1790	D. by Woodpecker	
D. by Regulus	D. Herod	*Canopus* 1803	
		D. by Woodpecker	
		Election 1801	
		D. by Woodpecker	
Joe Andrews 1778	**Dick Andrews** 1797	**Tramp** 1810 see Table VII.	
D. by Omnium	D. by Highflyer	D. by Gohanna	
Dungannon 1780	*Totteridge* 1791		
D. by Herod	D. by Mambrino	*Pioneer* 1804	*Emigrant* 1822
Volunteer 1780	*Eagle* 1796	D. by Highflyer	D. by Buzzard
D. by Tartar	D. by Highflyer	*Juniper* 1805	
Saltram 1780	*Whiskey* 1789	D. by Dragon	
D. by Snap	D. by Herod	*Marmion* 1806	
Alexander 1782	*Bucephalus* 1802	D. by Diomed	
D. by William's Forester	D. by Amaranthus		
Meteor 1783	? *Ambo* 1809		
D. by Merlin	D. by Sir Peter		
Gunpowder 1784	*Sancho* 1801	*Cannon Ball* 1810	
D. by Omar	D. by Highflyer	D. by Weathercock	
Don Quixote 1784	*Cervantes* 1806		
D. by William's Forester	D. by Highflyer		
Pegasus 1784	*Amadis* 1807		
D. by Bosphorus	D. by Sir Peter		
Serpent 1786			
D. by Spectator			
Ruler 1777			
D. by Lofty			
Shuttle 1793			
D. by Vauxhall Snap			
Shark 1791			
D. by Flimnap			

Table II. Darl. Arabian Line.

Sire	Sons	Grandsons	Great-grandsons
WHALEBONE 1807 D. by Trumpator	**Waverley** 1817 D. by Sir Peter	*The Saddler* 1828 D. by Castrel	*The Provost* 1836 D. by Lottery
		? **Don John** 1835 D. by Comus	**Jago** 1843 D. by Selim
	? *Moses* 1819 D. by Gohanna	*Abbas Mirza* 1831 D. by Shebdeez	
	Stumps 1822 D. by Delpini	*Sir Isaac* 1831 D. by Filho da Puta	
	Chateau Margaux 1822 D. by Gohanna	**Touchstone** 1831 see Table VIII. D. by Master Henry	
	Camel 1822 D. by Selim	*Caravan* 1834 D. by The Flyer	*Souvenir* 1859 D. by Y. Emilius
		Wintonian 1834 D. by Muley	
		Launcelot 1837 D. by Master Henry	
	Y. Whalebone 1823 D. by Sorcerer		
		Simoom 1838 D. by Paulowitz	*Sahama* 1850 D. by Slane
	Defence 1824 D. by Rubens	**Emperor** 1841 D. by Reveller	? **Monarque** 1852 se[e T…] D. by Royal Oak
	Albany 1825 D. by Gohanna		
	Merman 1826 D. by Orville		
	Sir Hercules 1826 D. by Wanderer	**Birdcatcher** 1833 see Table X. D. by Bob Booty	
		Coronation 1838 D. by Rubens	
		Robert de Gorham 1839 D. by Emilius	*The Nigger* 1847 D. by Elis
		Newcourt 1840 D. by Spectre	*Cotswold* 1853 D. by Pantaloon
			Cecrops 1863 D. by Longbow or Mountain Deer
		Faugh-a-Ballagh 1841 D. by Bob Booty	*Ethelbert* 1850 D. by Liverpool
			Leamington 1853 D. by Pantaloon
		Gunboat 1854 D. by Sheet Anchor	*Torpedo* 1876 D. by King Tom
		Gemma di Vergi 1854 D. by Heron	*Rococo* 1863 D. by Recovery
		Lifeboat 1855 D. by Sheet Anchor	
	Lapwing 1826 D. by Canopus	? *St. Lawrence* 1837 D. by Blacklock	

Scherz 1851
D. by Morisco
Bonnie Scotland 1853
D. by Gladiator
- *Bonnie Scotland* jun. 1865
  D. by Clay Trustie
- *Bramble* 1875 — *Ben Brush* 1893
  D. by Australian — D. by Alarm

Lollypop 1873
D. by Stockwell

Lahire 1861
D. by Y. Whalebone

IX.

First Lord 1866
D. by Teddington

King of Kent 1858 — *Paganini* 1865
D. by Touchstone — D. by Peppermint

- *Haymaker* 1865
  D. by Stockwell
- *Longfellow* 1867
  D. by Eclipse
  - *Longstreet* 1886
    D. by Glen Athol
  - *Riley* 1887
    D. by War Dance
- *Enquirer* 1867
  D. by Lexington
- *Sensation* 1877
  D. by Lexington
- *Iroquois* 1878 — *Tammany* 1889
  D. by Australian — D. by Great Tom
- **Onondaga** 1879 — **Locohatchee** 1889 — *Caiman* 1896
  D. by Lexington — D. by Ten Broek — D. by Coeruléus

Chippendale 1876
D. by Adventurer

Table III. Darl. Arabian Line.

- **WHISKER** 1814, D. by Trumpator
  - **Economist** 1825, D. by Octavian
    - **Harkaway** 1834, D. by Nabocklish
      - *Idle Boy* 1845, D. by Sir Hercules
        - *Pretty Boy* 1853, D. by Glaucus
          - *Gabier* 1867, D. by Pantaloon
            - *Dandin* 1879, D. by Cambuscan
  - *Memnon* 1822, D. by Dick Andrews
      - **King Tom** 1851, D. by Glencoe
        - *King of Diamonds* 1857, D. by Defence
        - *Old Calabar* 1859, D. by Piccaroon
          - *Indian Ocean* 1867, D. by Vortex
        - *Wingrave* 1859, D. by The Cure
        - *Master Fenton* 1859, D. by Touchstone
        - *Mogador* 1860, D. by Orlando
        - *Tom King* 1863, D. by Birdcatcher
          - *Umpire* 1873, D. by Ambrose
        - *Dalesman* 1863, D. by Pantaloon
          - *Lowlander* 1870, D. by Windhound
            - *Lowland Chief* 1878, D. by Stockwell
        - *Phaeton* 1865, D. by Storm
          - *King Alfonso* 1872, D. by Vandal
            - *Foxhall* 1878, D. by Lexington
        - *Restitution* 1865, D. by Slane
        - *King Alfred* 1865, D. by Bay Middleton
        - *Kingcraft* 1867, D. by Voltigeur
          - *Kingdom* 1879, D. by Prime Minister
          - *Grandmaster* 1880, D. by Kingston
            - *Loutch* 1890, D. by Blenheim
        - *King o' Scots* 1867, D. by The Fl. Dutchman
          - *Bruce* 1874, D. by Newcastle
        - *The Baron* 1869, D. by North Lincoln
        - *King Lud* 1869, D. by Voltigeur
          - *Ben Alder* 1880, D. by Rataplan
          - *King Monmouth* 1882, D. by King of Trumps
          - *Boudoir* 1890, D. by Plutus
        - *Marsworth* 1871, D. by Fernhill or Gleam
        - *Coltness* 1873, D. by Thormanby
        - *Great Tom* 1873, D. by Voltigeur
        - *Skylark* 1873, D. by Y. Melbourne
        - *Blue Blood* 1876, D. by Teddington
  - **The Colonel** 1825, D. by Delpini
    - *Chatham* 1839, D. by Camel
      - *Woolwich* 1846, D. by Actaeon
    - **Cap a Pie** 1837, D. by Sultan
      - **Sir Hercules** 1843, D. by Sir Hercules
        - **Yattendon** 1861, D. by Tros (by Priam)
          - **Chester** 1874, D. by Stockwell
            - *Abercorn* 1884, D. by Goldsbrough
          - **Grand Flaneur** 1877, D. by St. Albans
            - *Patron* 1890, D. by Tonnerre des Indes
            - *Merman* 1892, D. by Coltness

Table IV. Darl. Arabian Line.

- **BENINGBROUGH 1791**, D. by Herod
  - **Orville 1799**, D. by Highflyer
    - *Octavius* 1809, D. by Mufti
      - *Little John* 1816, D. by Woodpecker
    - **Muley** 1810, D. by Whiskey
      - *Morisco* 1819, D. by Eagle
        - ? *Taurus* 1826, D. by Soothsayer
          - *Turnus* 1846, D. by Defence
          - *John o'Gaunt* 1838, D. by Partisan
      - *Muley Moloch* 1830, D. by Dick Andrews
    - *Master Henry* 1815, D. by Stamford
    - *Andrew* 1816, D. by Sorcerer
      - *Cadland* 1825, D. by Sorcerer
        - *The Prime Warden* 1834, D. by Morisco
    - *Gulliver* 1819, D. by Sorcerer
    - **Emilius** 1820, D. by Stamford
      - *Recovery* 1827, D. by Rubens
        - *Retriever* 1836, D. by Whisker
      - *Priam* 1827, D. by Whiskey
        - *Chesterfield* 1834, D. by Octavian
        - *Tros* 1836, D. by Partisan
      - *St. Nicholas* 1827, D. by Scud
        - *Black Hambleton* 1833, D. by Thunderbolt
      - *Sarpedon* 1828, D. by The Flyer
      - *Plenipotentiary* 1831, D. by Pericles
        - *Nuncio* 1839, D. by Partisan
      - *Knobstick* 1832, D. by Partisan
        - *Y. Knobstick* 1834, D. by Whalebone
      - *Gomez* 1833, D. by Selim
        - *Y. Gomez* 1839, D. by Stratherne
          - *Lord George* 1851, D. by Zany
      - *Euclid* 1836, D. by Whisker
        - *Bantam* 1843, D. by Dr. Syntax
    - *Bizarre* 1820, D. by Peruvian
    - *Edmund* 1824, D. by Waxy
  - *Scud* 1804, D. by Highflyer
    - *Actaeon* 1822, D. by Stamford
      - *St. Martin* 1835, D. by Walton
      - *General Chassé* 1831, D. by Stamford

Table V. Darl. Arabian Line.

- **HAMBLETONIAN 1792** D. by Highflyer
  - **Whitelock 1803** D. by Phoenomenon
    - **Blacklock 1814** D. by Coriander
      - *Buzzard* 1821 D. by Delpini
      - **Brutandorf** 1821 D. by Pot8os
        - **Physician** 1829 D. by Prime Minister
          - *Blackdrop* 1840 D. by Langar
          - **The Cure** 1841 D. by Mulatto
            - *Underhand* 1854 D. by Emilius
              - *Fervacques* 1864 D. by Annandale
        - *Helman Platoff* 1836 D. by Comus
          - *The Cossack* 1844 D. by Priam
          - *Muscovite* 1849 D. by Camel
      - *Belzoni* 1823 D. by Dick Andrews
      - **Velocipede** 1825 D. by Juniper
        - *Hornsea* 1832 D. by Cerberus
        - *King of Trumps* 1849 D. by Viator
      - *Y. Blacklock* 1825 D. by Ditto
        - *Magpie* 1834 D. by Waxy
          - *Chit Chat* 1849 D. by Smolensko
      - *Tranby* 1826 D. by Orville
      - **Voltaire** 1826 D. by Phantom
        - *Henriade* 1831 D. by Comus
          - *Cholm* 1855 D. by Farintosh
            - *Alboin* 1869 D. by Flatcatcher
        - *Charles XII.* 1836 D. by Prime Minister
        - *Tearaway* 1838 D. by Whisker
        - *Barnton* 1844 D. by Mulatto
          - *Fandango* 1852 D. by Don John
          - *Ben Webster* 1857 D. by Prime Warden
        - **Voltigeur** 1847 see Table XI. D. by Mulatto
      - *Belshazzar* 1830 D. by Dick Andrews
  - **Camillus 1803** D. by Pacolet
    - *Oiseau* 1809 D. by Ruler
      - *Rowlon* 1826 D. by Woful
      - *Revolution* 1827 D. by Don Cossack
        - *Louis Philipp* 1841 D. by Filho da Puta
    - *Magistrate* 1814 D. by Stamford
      - *Terror* 1825 D. by Cerberus
        - *Attila* 1838 D. by Mustachio
          - *St. Germain* 1847 D. by St. Patrick

Table VI. Darl. Arabian Line.

Table VII. Darl. Arabian Line.

- **TRAMP 1810**, D. by Gohanna
  - **Lottery** 1820, D. by Pot8os — — —
    - *Chorister* 1828, D. by Chorus
    - *Alteruter* 1831, D. by Orville
    - *Inheritor* 1831, D. by Walton
    - **Sheet Anchor** 1832, D. by Muley — —
      - *Sirikol* 1840, D. by Partisan
      - **Weatherbit** 1842, D. by Priam — — — —
    - *Verulam* 1833, D. by Waxy — — —
      - *Vulcan* 1837, D. by Teniers
  - *Ziganee* 1825, D. by Y. Drone
  - *Little Red Rover* 1827, D. by Paynator
  - **Liverpool** 1828, D. by Whisker — — —
    - **Lanercost** 1835, D. by Bustard — — —
      - *War Eagle* 1844, D. by Voltaire
      - **Van Tromp** 1844, D. by Sandbeck — — — —
      - *Loup Garou* 1846, D. by Tomboy — — — —
      - *Colsterdale* 1848, D. by Tomboy
      - *De Ruyter* 1848, D. by Sandbeck
    - *Mosstrooper* 1839, D. by Emilius
  - *St. Giles* 1829, D. by Ardrossan

- *Kelpie* 1855, D. by St. Francis
  - *Fireworks* 1864, D. by Sir Hercules
    - *Goldsbrough* 1870, D. by Fisherman
      - *Atlantic* 1878, D. by Peter Wilkins
- **Beadsman** 1855, D. by Touchstone
  - **The Palmer** 1864, D. by Cowl
    - *Grey Palmer* 1872, D. by Chanticleer
    - *Pellegrino* 1874, D. by Macaroni
  - *Blue Gown* 1865, D. by Stockwell
  - **Rosicrucian** 1865, D. by Cowl
    - *Chevron* 1874, D. by Stockwell
    - *Beauclerc* 1875, D. by Voltigeur
      - *Chislehurst* 1880, D. by King Tom
        - *Macdonald* 1899, D. by Basnäs
      - *Tyrant* 1885, D. by Exminster
        - *Masqué* 1894, D. by Mask
    - *Ercildoune* 1877, D. by King Tom
    - *Zanoni* 1875, D. by Stockwell
    - *Althotas* 1878, D. by Vespasian
    - *Dalberg* 1887, D by Paganini
    - *Laureate* 1879, D. by Orlando
      - *Whittier* 1892, D. by John Davis
  - *Pero Gomez* 1866, D. by Student
    - *Sir Charles* 1878, D. by Ethelbert
    - *Peregrine* 1878, D. by Y. Melbourne
  - *Alvarez* 1869, D. by Student
  - *Coeruleus* 1872, D. by Stockwell
    - *Blue-green* 1887, D. by Galopin
  - *The Jolly Friar* 1873, D. by Macaroni
- *Neptunus* 1859, D. by Birdcatcher
- *Bel Demonio* 1861, D. by Birdcatcher
- **Brown Bread** 1862, D. by West Australian
  - *Whitebait* 1871, D. by Lambton
  - *Picnic* 1872, D. by Arthur Wellesley or Post Tempore
  - *Hilarious* 1874, D. by Knight of Kars
  - *Toastmaster* 1877, D. by The Marquis
  - *Sweetbread* 1879, D. by Adventurer
- *Brown Tommy* 1864, D. by West Australian
- *Mandrake* 1864, D. by Rataplan
  - *Mango* 1874, D. by Knight of Kars
  - *Strathmore* 1874, D. by Stockwell
- *Ivan* 1851, D. by Brutandorf
- *Van Galen* 1853, D. by Inheritor
  - *Tim Whiffler* 1861, D. by Ugly Buck
  - *Van Amburgh* 1864, D. by Longbow or Mountain Deer
- *Lambourne* 1854, D. by Pantaloon

Table VIII. Darl. Arabian Line.

TOUCHSTONE 1831
D. by Master Henry

Sons	Grandsons	Great-grandsons
Auckland 1839 D. by Champion		
Cotherstone 1840 D. by Whisker	*Stilton* 1849 D. by Slane	*Danseur* 1854 D. by New Light *Durchlaucht* 1858 D. by Snyders
	Glenmasson 1854 D. by Priam	*Vestminster* 1866 D. by Envoy
Orlando 1841 see Table VIII. a D. by Langar		
Ithuriel 1841 D. by Velocipede	**Longbow** 1849 D. by Catton	**Toxophilite** 1855 — D. by Pantaloon
Annandale 1842 D. by Lottery		
Falstaff 1842 D. by Filho da Puta		
Paragone 1843 D. by Tomboy	*Orpheus* 1860 — D. by St. Nicholas	
Flatcatcher 1845 D. by Filho da Puta		
Surplice 1845 D. by Priam	*Pylades* 1852 D. by Bay Middleton	*North Lincoln* 1856 D. by Redshank
Pontifex 1847 D. by Priam	*Flash in the Pan* 1856 D. by Pompey	
Newminster 1848 see Table VIII. b D. by Dr. Syntax		
Storm 1848 D. by Pantaloon		
Mountain Deer 1848 D. by Belshazzar	*Druid* 1857 D. by Harkaway *Coroner* 1856 D. by Tearaway	
Harbinger 1849 D. by Elis		
Magnes 1849 D. by Langar		
Vindex 1850 D. by Langar	*Victor* 1859 D. by Scroggins	*Valour* 1875 D. by Mount Zion
	The Avenger 1860 D. by Sesostris	
Lord of the Isles 1852 D. by Pantaloon	*Dundee* 1858 D. by Sweetmeat	*Lord of the Vale* 1863 D. by Pantaloon *Marksman* 1864 D. by Birdcatcher *Hobgoblin* 1866 D. by The Ugly Buck
	Scottish Chief 1861 D. by The Little Known	*King of the Forest* 1868 D. by Fandango *Lammermoor* 1874 D. by Buccaneer *Fitz James* 1875 — D. by Kettledrum *Childeric* 1875 — D. by Saunterer *Napsbury* 1877 D. by Rataplan *Taurus* 1879 D. by Thunderbolt *Pursebearer* 1879 D. by Stockwell
De Clare 1852 D. by Catton		
Rifleman 1852 D. by The Colonel		
Claret 1852 D. by Belshazzar	*Blarney* 1861 D. by Magpie *Londesborough* 1867 D. by Hetman Platoff	
Artillery 1853 D. by Birdcatcher		
Tournament 1854 D. by Venison	*Master Willie* 1864 D. by Hautboy *Gitano* 1866 D. by Espérance *Baromètre* 1868 D. by The Baron *Golos* 1868 D. by The Prime Warden	
Wamba 1857 D. by Recovery		
Atherstone 1858 D. by Merry Monarch		
Soapstone 1860 D. by Malcolm	*Mirliflor* 1872 D. by Knowsley	

— — — — **Musket** 1867 — — — — — —
D. by West Australian

- *Petronel* 1877
  D. by Hesperus
- **Trenton** 1881 — — —
  D. by Goldsbrough
  - *Aurum* 1894
    D. by Richmond
  - *Eccleston* 1898
    D. by Beaudesert
- *Nordenfeld* 1882 — — — *Carnage* 1890
  D. by Angler — D. by Knowsley
- **Carbine** 1885 — — —
  D. by Knowsley
  - *Wargrave* 1898
    D. by Skylark
  - *Fowling Piece* 1899
    D. by Galopin
  - *Spearmint* 1903
    D. by Minting

Bay Archer 1876
D. by Y. Melbourne

Lancastrian 1876
D. by West Australian

— — — — *Noble Chieftain* 1885
D. by Moulsey

— — — — *The General* 1882
D. by Thunderbolt

Table VIII. a. Darl. Arabian Line.

ORLANDO 1841
D. by Langar

Teddington 1848 D. by Rockingham	*Moulsey* 1861 D. by Pantaloon	
Orpheus 1849 D. by Whisker		
Orestes 1850 D. by Bay Middleton	*Orest* 1857 D. by Touchstone	*Hollywood* 1871 D. by King Tom
Marsyas 1851 D. by Whisker	**Albert Victor** 1868 D. by Stockwell	**The Sailor Prince** 1880 D. by Hermit
	George Frederick 1871 D. by Stockwell	*Frontin* 1880 D. by Weatherbit *Beau Brummel* 1880 D. by Lord Clifden
Fazzoletto 1853 D. by Melbourne	*King Victor* 1864 D. by Heron	
Zuyder Zee 1854 D. by Sandbeck		
Chevalier d'Industrie 1854 D. by Priam	*Blenheim* 1861 D. by Robert de Gorham *Friponnier* 1864 D. by Teddington	
Fitz Roland 1855 D. by Emilius		
Eclipse 1855 D. by Bay Middleton	**Alarm** 1869 D. by Stockwell	**Himyar** 1875 D. by Lexington *Munden* 1871 D. by Birdcatcher
Trumpeter 1856 D. by Redshank	*Hanstead* 1862 D. by Stockwell	
	Plutus 1863 D. by Planet	**Flageolet** 1870 D. by Monarque *Fil-en-Quatre* 1877 D. by Monarque *Fricandeau* 1883 D. by Pretty Boy
	Y. Trumpeter 1864 D. by Surplice	
	Distin 1864 D. by Hesperus	*Avontes* 1874 D. by Ratan
	Challenge 1864 D. by Prime Minister	*Hastings* 1872 D. by Hesperus
	Queen's Messenger 1869 D. by Kingston	
Crater 1857 D. by Gladiator		
Diophantus 1858 D. by Emilius		
Canary 1858 D. by Plenipotentiary	**Xenophon** 1872 D. by Birdcatcher	*The Baron* 1884 D. by Lord Lyon **Aughrim** 1883 D. by Uncas
Lacydes 1859 D. by Plenipotentiary		
Chattanooga 1862 D. by Birdcatcher	**Wellingtonia** 1869 D. by Ambrose	*Clover* 1886 D. by Prince Charlie

Diakka 1893 D. by Mortemer		
Plaudit 1895 D. by Tomahawk	*Disguise* 1897 D. by Galopin	
Domino 1891 D. by Enquirer	*Commando* 1898 D. by Darebin	
Ismael 1876 D. by West Australian	*Octagon* 1884 D. by Macaroni	
Rayon d'Or 1876 D. by Ambrose	*Tea Tray* 1885 D. by War Dance	
Zut 1876 D. by Stockwell	*Frejeville* 1886 D. by Saxifrage	
Beauminet 1877 D. by Knowsley	*Châlet* 1887 D. by Cremorne	*Maximum II.* 1899 D. by Dollar
Le Destrier 1877 D. by Black Eyes	*Stuart* 1885 D. by Stockwell	
	Cadix 1889 D. by Dollar	
Xaintrailles 1882 D. by The Fl. Dutchman	*Polygone* 1891 D. by Dollar	
Geheimrath 1889 D. by Chamant	*Melchior* 1891 D. by Montargis	
Count Schomberg 1892 D. by Baliol	*Black Arrow* 1903 D. by Bendigo	
Arreau 1893 D. by Cambuscan		

Table VIII. b. Darl. Arabian Line.

- **NEWMINSTER** 1848, D. by Dr. Syntax
  - *Musjid* 1856, D. by Muley Moloch
  - *Exminster* 1857, D. by Cowl
  - **Adventurer** 1859, D. by Emilius
    - *Argyle* 1866, D. by Birdcatcher
    - *Pretender* 1866, D. by Venison
    - *Roehampton* 1873, D. by Stockwell
    - *Glen Arthur* 1874, D. by Kingston
    - **Ruperra** 1876, D. by Thormanby
      - *Rajta-Rajta* 1885, D. by Lord Lyon
      - *Achilles* 1888, D. by Buccaneer
    - *Forager* 1877, D. by Stockwell
    - *Zeal* 1877, D. by Stockwell
    - **Privateer** 1878, D. by Thormanby
      - *Buccaneer* 1888, D. by Lord Lyon
      - *Yard Arm* 1897, D. by Cardinal York
  - **Lord Clifden** 1860, D. by Melbourne, see Table VIII. c
  - **Cambuscan** 1861, D. by Slane
    - *Onslow* 1869, D. by Voltigeur
    - *Billesdon* 1872, D. by The Baron
      - *Cäsar* 1878, D. by Kettledrum
    - **Camballo** 1872, D. by Orlando
      - *The Lambkin* 1881, D. by Y. Melbourne
      - *Salisbury* 1884, D. by Oxford
    - *Cambusier* 1879, D. by Saunterer
    - *Pásztor* 1881, D. by Buccaneer
  - *The Beadle* 1861, D. by Plenipotentiary
  - **Cathedral** 1861, D. by Melbourne
    - *Landmark* 1869, D. by Birdcatcher
    - *Dalham* 1871, D. by The Marquis
  - *Victorious* 1862, D. by Jeremy Diddler
  - *Vespasian* 1863, D. by Stockwell
  - **Strathconan** 1863, D. by Chanticleer
    - *Buchanan* 1877, D. by Y. Melbourne
    - *Eastern Emperor* 1881, D. by Rataplan
  - *Laneret* 1863, D. by Venison
  - *The Peer* 1863, D. by Sheet Anchor
  - *Bertie* 1863, D. by Gladiator
  - **Hermit** 1864 see Table VIII. d, D. by Tadmor
  - *Kidderminster* 1864, D. by Camel

Table VIII. c. Darl. Arabian Line.

- **LORD CLIFDEN** 1860 D. by Melbourne
  - *Hawthornden* 1867 D. by The Flying Dutchman
  - *Barefoot* 1868 D. by Stockwell
  - *Hymenaeus* 1869 D. by Wild Dayrell
  - *Wenlock* 1869 D. by Rataplan
  - *Winslow* 1869 D. by King Tom
  - **Hampton** 1872 D. by Kettledrum
    - *Highland Chief* 1880 D. by Stockwell
    - **Royal Hampton** 1882 D. by King Tom
      - *Marcion* 1890 D. by Queen's Messenger
      - *Kirkconnel* 1892 D. by Blair Athol
    - *Merry Hampton* 1884 D. by Broomielaw
    - **Ayrshire** 1885 D. by Galopin
      - *Symington* 1893 D. by St. Simon
    - *Sheen* 1885 D. by Tibthorpe
      - *Ninus* 1895 D. by Lowlander
    - *Bushey Park* 1889 D. by Thormanby
    - **Ladas** 1891 D. by Rosicrucian
      - *Troutbeck* 1903 D. by Bend Or
    - *Speed* 1891 D. by Tibthorpe
    - *Bay Ronald* 1893 D. by Galliard
  - *Rotherhill* 1872 D. by Orlando
  - *Basnäs* 1872 D. by Stockwell
  - **Petrarch** 1873 D. by Orlando
    - **The Bard** 1883 D. by Syrian
      - *Bérenger* 1888 D. by Trocadéro
      - *Launay* 1892 D. by Mortemer or Monarque
      - *Saxon* 1898 D. by Clairvaux or Isonomy
    - *Florentine* 1884 D. by Kettledrum
    - *Laureate II.* 1886 D. by Macaroni
    - *Lactantius* 1887 D. by Macaroni
    - *Hackler* 1887 D. by Albert Victor
  - *Lord Clive* 1875 D. by Buccaneer

Table VIII. d. Darl. Arabian Line.

HERMIT 1864
D. by Tadmor

Sons	Grandsons
Ascetic 1871 D. by Melbourne	*Royal Meath* 1884 D. by Coroner *Sir Patrick* 1890 D. by Herbertstown *Lord Abbot* 1898 D. by Chippendale
Holy Friar 1872 D. by Thormanby	
Recorder 1872 D. by St. Albans	*Königstein* 1888 D. by Strathconan
Trappist 1872 D. by Muscovite	
Ambergris 1873 D. by Longbow	
Gunnersbury 1876 D. by King Tom	*Gajare* 1885 D. by Albion *Mocros* 1886 D. by Rosicrucian *Urám-batyám* 1886 D. by Buccaneer *Gourmand* 1890 D. by Kisber öcsese *Galifard* 1896 D. by Galopin
The Miser 1877 D. by St. Albans	
Zealot 1877 D. by Stockwell	
Peter 1876 D. by Brother to Strafford	*Zsupán* 1884 D. by Blair Athol
The Abbot 1877 D. by Pelion	*Father Confessor* 1885 D. by The Hadji
Retreat 1877 D. by Rataplan	*Andrée* 1892 D. by Galopin
St. Louis 1878 D. by Macaroni	*Le Hardy* 1888 D. by St. Albans
Edward the Confessor 1878 D. by Stockwell	
Tristan 1878 D. by Stockwell	*Le Nord* 1887 D. by Wellingtonia *Le Nicham II.* 1890 D. by Wellingtonia *Styx* 1891 D. by Galopin
Martini 1878 D. by Toxophilite	
Exile II. 1878 D. by Lord Lyon	*Aborigine* 1890 D. by Glen Arthur
Marden 1879 D. by Pelion	
Clairvaux 1880 D. by Stockwell	
St. Blaise 1880 D. by Marsyas	*Margrave* 1893 D. by Ill-Used
Torpedo 1880 D. by Toxophilite	
St. Honorat 1882 D. by Stockwell	
Swillington 1882 D. by Stockwell	
Tacitus 1882 D. by Y. Melbourne	
Gamin 1883 D. by Scottish Chief	*Gospodar* 1891 D. by Trocadero
Hawkstone 1883 D. by Stockwell	
Gay Hermit 1883 D. by Broomielaw	
Timothy 1884 D. by Brother to Strafford	
Hazlehatch 1885 D. by Cathedral	
Friar's Balsam 1885 D. by Breadalbane	*The Quack* 1893 D. by Galopin
Astrologer 1885 D. by Brother to Strafford	
Melanion 1886 D. by Galopin	*Millenium* 1896 D. by Barcaldine *Black Sand* 1897 D. by Wenlock
Heaume 1887 D. by Breadalbane	*Le Roi Soleil* 1895 D. by Boiard
Missal 1891 D. by Thunderbolt	

Table IX. Darl. Arabian Line.

MONARQUE 1852
D. by Royal Oak

- *Hospodar* 1860 D. by Emilius
  - *Le Drôle* 1873 D. by Black Eyes
- *La Maréchal* 1860 D. by Sir Hercules
- *Le Mandarin* 1862 D. by Nuncio
- **Gladiateur** 1862 D. by Gladiator
  - *Lydon* 1868 D. by Sesostris
  - *Grand Coup* 1868 D. by Stockwell
  - *Lord Gough* 1869 D. by Rataplan
    - *Faugh-a-Ballagh* 1879 D. by The Student
  - *Grandmaster* 1868 D. by Stockwell
  - *Highborn* 1870 D. by Faugh-a-Ballagh
- *V. Monarque* 1863 D. by Emilius
- *Patricien* 1864 D. by Gladiator
- *Le Sarrazin* 1865 D. by Gladiator
- **Consul** 1866 D. by Sir Hercules
  - **Nougat** 1872 D. by Gladiator
    - *Farfadet* 1880 D. by Joskin
      - *Ermak* 1888 D. by Lord Lyon
    - *Aerolithe* 1886 D. by Dollar
  - *Kilt* 1873 D. by Stockwell
  - *Albion* 1878 D. by Atherstone
  - *Archiduc* 1881 D. by Atherstone
  - **Fripon** 1883 D. by Favonius
    - *Le Pompon* 1891 D. by Scottish Chief
    - *Talion* 1896 D. by Westminster
- *Boulogne* 1866 D. by Ion
- *Don Carlos* 1867 D. by The Baron
  - *Barberousse* 1886 D. by Beauvais
- *Henry* 1868 D. by Ion
  - *Balagny* 1874 D. by Fitz Gladiator
- *Longchamps* 1864 D. by The Baron
- *Général* 1868 D. by Festival or Valbruant
- **Trocadero** 1864 D. by Epirus
  - **Narcisse** 1876 D. by Weatherbit
    - *Chêne Royal* 1889 D. by Perplexe
  - *Bariolet* 1878 D. by Orphelin
  - *Fra Diavolo* 1881 D. by Orphelin
  - *Richelieu* 1881 D. by Orphelin
- *Feu d'Amour* 1871 D. by Ventre-St.-Gris

Table X. Darl. Arabian Line.

- *Mickey Free* 1841, D. by Wanderer
  - *Kentucky* 1854, D. by Muley Moloch
- **The Baron** 1842, D. by Economist
  - **Stockwell** 1849, D. by Glencoe, see Table X. a
  - **Rataplan** 1850, D. by Glencoe
    - *Drummer* 1857, D. by Humphrey Clinker
    - **Kettledrum** 1858, D. by The Provost
      - *Cymbal* 1867, D. by Springy Jack
        - *Phönix* 1875, D. by First Born
      - *Amaranthus* 1876, D. by Knight of St. Patrick
      - *Drum Major* 1876, D. by Orlando
    - *The Miner* 1861, D. by Birdcatcher
    - *Cowden* 1862, D. by Melbourne
    - *Elland* 1862, D. by Chanticleer
    - **Blinkhoolie** 1864, D. by Gladiator
      - **Wisdom** 1873, D. by Stockwell
        - *Veracity* 1884, D. by Honiton
        - *Wiseman* 1885, D. by Strafford
        - *Surefoot* 1887, D. by Galopin
        - *Right-Away* 1887, D. by Honiton
          - *Elopement* 1897, D. by Barcaldine
        - *Sir Hugo* 1889, D. by Lord Clifden
        - *Love Wisely* 1893, D. by Philamon
    - *Goodwood* 1864, D. by Annandale
    - *Drummond* 1869, D. by The Fl. Dutchman
    - *Ben Battle* 1871, D. by Y. Melbourne
      - *Man of War* 1880, D. by Solon
      - *Bendigo* 1880, D. by Lord Gough
  - *Fort-a-Bras* 1855, D. by Physician
  - *Tonnere des Indes* 1855, D. by Royal Oak
  - *Zouave* 1855, D. by Gladiator
  - *Astaroth* 1861, D. by Y. Emilius
- *Chanticleer* 1843, D. by Drone
  - *Vengeance* 1852, D. by The Saddler
    - *Sydmonton* 1862, D. by Scutari
  - *Sunbeam* 1855, D. by Bay Middleton
- *Marquis* 1848, D. by Apollo
  - *Blood Royal* 1859, D. by Philip I.
- *Womersley* 1849, D. by Touchstone
  - *St. Giles* 1854, D. by Sleight of Hand
    - *Giles I.* 1860, D. by Launcelot
    - *Brigadier* 1866, D. by Elis
  - *General Williams* 1854, D. by Sleight of Hand
  - *Marignan* 1859, D. by Drayton
- *Daniel O'Rourke* 1849, D. by Hetman Platoff
- *Lord Fauconberg* 1850, D. by Muley Moloch
- *Knight of St. George* 1851, D. by Hetman Platoff
  - *Knight of St. Patrick* 1858, D. by Glencoe
    - *Knight of the Crescent* 1863, D. by Beiram
    - *Moslem* 1865, D. by Beiram
- *Gamekeeper* 1851, D. by Lanercost
- *Bandy* 1851, D. by Economist
- *Warlock* 1853, D. by Emilius
  - *Tynedale* 1864, D. by T[illegible]
    - *Border Minstrel* 1880

Continuation of the line (sires not shown on this page):

- *Isobar* 1882, D. by Hermit
- **Gallinule** 1884, D. by Hermit
  - *Portmarnock* 1892, D. by Ben Battle
  - *Lesterlin* 1892, D. by Arbitrator
  - *General Peace* 1894, D. by Uncas
  - *Mount Prospect* 1894, D. by Pride of Prussia
  - *Dunamase* 1895, D. by Swordsman
  - *Wildfowler* 1895, D. by Ben Battle
    - *Llangibby* 1902, D. by Reverberation
  - *Oppressor* 1896, D. by Uncas
  - *Greif* 1896, D. by Arbitrator
  - *Santry* 1901, D. by Necromancer
  - *Hamurabi* 1903, D. by Morion
  - *Rockeller* 1903, D. by Herald
  - *Slieve Gallion* 1904, D. by St. Florian
- *Fortunio* 1885, D. by Hermit
- *Galaor* 1885
  - *Weathercock* 1893, D. by Doncaster or

Saunterer 1854 — *Digby Grand* 1868 — *Tartar* 1880 — [illegible] 1895 — [illegible] 1907

BIRDCATCHER D. by Bob Boo	D. by Heron	D. by Peppermint		D. by Lord Clifden	D. by The Earl or The Palmer
			Isonomy 1875 D. by Stockwell	*Valauris* 1888 D. by Hermit	*Volapük* 1894 D. by Trumpeter or The Palmer
			Fernandez 1877 D. by Stockwell	*Common* 1888 D. by Scottish Chief	
			Beaudesert 1877 D. by Lifeboat	*Islington* 1888 D. by Wenlock	
			Geologist 1878 D. by Lord Clifden	**Isinglass** 1890 D. by Wenlock	*John o' Gaunt* 1901 D. by St. Simon
					Wombell 1903 D. by St. Simon
	Papageno 1851 D. by Simoom			*Ravensbury* 1890 D. by Hermit	
				Bennilthorpe 1891 D. by Tibthorpe	
				Son o' Mine 1891 D. by Hermit	*Apanage* 1900 D. by Saraband
					Querido 1903 D. by Galliard
	Lifeboat 1855 D. by Sheet Anchor			*Le Butard* 1888 D. by Doncaster	
				Gouverneur 1888 D. by Tournament	*Tuki* 1898 D. by Flibustier
		Sterling 1868 D. by Flatcatcher	**Energy** 1880 D. by The Duke	*Reverend* 1888 D. by Perplexe	*Caius* 1900 D. by Galopin
		Blenheim 1868 D. by The Flying Dutchman	*Harvester* 1881 D. by Y. Melbourne		
	Oxford 1857 D. by Plenipotentiary	*Playfair* 1869 D. by Flatcatcher	*Esterling* 1882 D. by Adventurer	**Rueil** 1889 D. by Perplexe	*Cazabat* 1895 D. by Mandrake
					Mauvezin 1896 D. by Holy Friar
		Nuneham 1869 D. by Ambrose	*Paradox* 1882 D. by The Miner	*Alconbury* 1891 D. by Adventurer	
			Metal 1882 D. by Vespasian		
			Atheling 1883 D. by King Tom		
			Silver 1883 D. by Tibthorpe		
			Cherry Ripe 1884 D. by The Duke		
			Enterprise 1884 D. by King Tom		
			Gold 1886 D. by Tibthorpe		
			Enthusiast 1886 D. by The Duke	*Eager* 1894 D. by Melton	
			Hackberry 1887 D. by The Duke		

Table X. a. Darl. Arabian Line.

Comforter 1856 D. by Jereed			
St. Albans 1857 see Table X. b D. by The Libel			
Suburban 1857 D. by Verulam			
Thunderbolt 1857 — — —	*Vulcan* 1864 D. by Alarm *Thunderer* 1868 D. by Melbourne *Thunder* 1870 D. by Melbourne *Lemnos* 1871 D. by Orlando *Reverberation* 1871 D. by Harkaway *Krakatoa* 1884 D. by Hermit		
D. by Reed Deer			
Loiterer 1857 D. by Bay Middleton			
Camerino 1858 D. by Touchstone			
The Drake 1858 D. by Pyrrhus I.			
Asteroid 1858 — — — — D. by Touchstone	*Siderolite* 1866 D. by Bay Middleton *Astrologer* 1877 D. by Trumpeter		
The Marquis 1859 — — — D. by Touchstone	*Newminster* 1873 D. by Leamington		
Caterer 1859 — — — — D. by Orlando	*Leolinus* 1871 D. by Melbourne *Braconnier* 1873 D. by Ethelbert		
Exchequer 1859 D. by Emilius			
Laughing Stock 1859 D. by Touchstone			
Grimston 1859 D. by Lanercost			
Citadel 1859 — — — — — D. by Melbourne	*Glenelg* 1866 — — — — — — D. by Kingston	*Idea* 1878 D. by Lexington	
Hubert 1859 D. by Touchstone			
Knowsley 1859 — — — — D. by Orlando	*His Majesty* 1870 D. by Y. Melbourne		
Grimston 1860 — — — — D. by Orlando	*Adonis* 1867 D. by Sleight of Hand		
Blair Athol 1861 see Table X. b D. by Melbourne			
Breadalbane 1862 — — — D. by Melbourne	*The Ill Used* 1870 D. by Chanticleer *Carnation* 1872 D. by Hautboy *Eberhard* 1873 — — — —	*Bulgar* 1884	*Mephisto* 1883 D. by Macgregor *Chittabob* 1886
Broomielaw 1862 D. by Gladiator	D. by Birdcatcher	D. by Newminster	
The Duke 1862 — — —	**Bertram** 1869 — — — —	**Robert the Devil** 1877	D. by The D[illegible] *Bel Demonio* 1887

D. by Venison
Jack o' Lantern 1862
D. by Orlando
Lord Ronald 1862 — — — **Master Kildare** 1875 — — **Melton** 1882 — — — — — *Avington* 1890 — — — — *Achilles* 1903
D. by Newminster — D. by Plum Pudding — D. by Scottish Chief — D. by The Speaker — D. by Anakim

Hirnök 1873 (by Master Kildare), D. by Newminster

Ostende Express 1899 (by Master Kildare), D. by Jolly Friar

? Best Man 1890 (by Melton), D. by Wenlock
William Rufus 1900 (by Melton), D. by St. Simon
Arconte 1896 (by Melton), D. by Andrew

Westwick 1863
D. by Touchstone
Monarch of the Glen 1863
D. by Touchstone
Honiton 1863 — — — — *The Lizard* 1868
D. by Surplice — D. by Sweetmeat
Lord Lyon 1863 see Table X. b
D. by Paragone

Saveruake 1863 — — — —
D. by The Libel
- *Hochstapler* 1870, D. by West Australian
- *Paul* 1871, D. by Orlando
- *Nickel* 1887, D. by Hermit
- *Bandit* 1887, D. by Rosicrucian

Theobald 1863
D. by Red Hart

Rustic 1863 — — — — — *Sonntag* 1875
D. by Pyrrhus I. — D. by Rifleman
Balmoral 1864
(after *Uncas*)
D. by Touchstone
Typhoeus 1865
D. by Touchstone

Uncas 1865 — — — — —
D. by Mountain Deer
- *Ingomar* 1872, D. by Red Hart
- *Theorist* 1879, D. by Leamington
- *Boulevard* 1880, D. by Plum Pudding
- *Prism* 1880, D. by Yorkminster

Belladrum 1866 — — — — *Herberstown* 1872
D. by Lanercost — D. by Magpie
Duke of Edinbourgh 1866
D. by Melbourne
Glenlyon 1866
D. by Touchstone
Hengist 1867
D. by Van Tromp
Falkirk 1868
D. by Bay Middleton
Gang Forward 1870
D. by Orlando
Doncaster 1870 see Table X. c
D. by Teddington
Lucebit 1871
D. by Orlando

Table X. b. Darl. Arabian Line.

Sire	Sons	Grandsons	Great-grandsons
ST. ALBANS 1857 D. by The Liebel	*Julius* 1864 D. by Orlando		
	St. Ronan 1865 D. by Birdcatcher		
	St. Mungo 1866 D. by Melbourne		
	Martyrdom 1866 D. by Euclid		
	Silvester 1869 D. by Kingston		
	Mr. Winkle 1871 D. by Birdcatcher		
	Springfield 1873 D. by Marsyas	*Morgan* 1883 D. by Scottish Chief	*Pardon* 1896 D. by Peter
		Sorrento 1884 D. by Macaroni	*Lutrin* 1899 D. by Don Charlos
		Neapolis 1885 D. by Macaroni	
		Sainfoin 1887 D. by Wenlock	*Rock Sand* 1900 D. by St. Simon
		Watercress 1889 D. by Hermit	
BLAIR ATHOL 1861 D. by Melbourne	*Ethus* 1866 D. by Touchstone	*Marshall Scott* 1876 D. by Y. Melbourne	
	Jack of Oran 1869 D. by Touchstone	*Darby* 1885 D. by Statesman	
	Struan 1869 D. by Touchstone	*Brag* 1878 D. by Flatterer	*Bumptious* 1888 D. by Pell Mell
	Prince Charlie 1869 D. by Surplice	*Salvator* 1886 D. by Lexington	
		Lochiel 1882 D. by Voltigeur	
	Andred 1870 D. by Voltigeur		
	Tangible 1870 D. by Touchstone		
	Craig Millar 1872 D. by Fitz Roland	*Bread Knif* 1883 D. by Brown Bread	
	Claremont 1872 D. by Kingston		
	Maelstrom 1873 D. by Touchstone		
	Clanronald 1873 D. by Newminster		
	Glendale 1873 D. by Daniel O'Rourke		
	Silvio 1874 D. by Kingston		
	Altyre 1874 D. by Sweetmeat		
	The Rover 1874 D. by Newminster	? **St. Gatien** 18[illegible]1 D. by Kingley Vale	*Meddler* 1890 D. by Petrarch
	Baliol 1879 D. by Teddington		
	The Child of the Mist 1882 D. by Lord Clifden		
LORD LYON 1863 D. by Paragone	**Touchet** 1874 D. by Wild Dayrell	*Necromancer* 1882 D. by Scottish Chief	*Delphos* 1891 D. by Speculum
		Juggler 1885 D. by Scottish Chief	
	Minting 1883 D. by Y. Melbourne		

Table X. c. Darl. Arabian Line.

- **DONCASTER 1870**, D. by Teddington
  - **Bend Or** 1877, D. by Thormanby
    - **Kendal** 1883, D. by Macaroni
      - *Red Prince II.* 1889, D. by Blood Royal
        - *Red Sahib* 1900, D. by Tacitus
      - *Blairfinde* 1891, D. by Springfield
      - *Killyleagh* 1893, D. by Rosicrucian
      - **Galtee More** 1894, D. by Springfield
        - *Irish Lad* 1900, D. by Vederemo
        - *Karoly* 1901, D. by Vederemo
        - *Galtee Boy* 1902, D. by Pellegrino
        - *Hamurabi* 1903, D. by Gajaré
    - **Ormonde** 1883, D. by Macaroni
      - *Orville* 1889, D. by Hermit
      - **Orme** 1889, D. by Galopin
        - *Ameer* 1895, D. by Bend Or
        - **Flying Fox** 1896, D. by Galopin
          - *Gouvernant* 1901, D. by Energy
          - *Ajax* 1901, D. by Clamart
          - *Jardy* 1902, D. by Ayrshire
          - *Adam* 1902, D. by Clamart
          - *Val-d'Or* 1902, D. by *Bruce*
        - **Missel Thrush** 1897, D. by Petrarch
          - *Thrush* 1902, D. by Charibert
        - *Orby* 1904, D. by Hannover
      - *Llanthony* 1889, D. by Speculum
      - *Goldfinch* 1889, D. by Scottish Chief
      - *Glenwood* 1890, D. by Dutch Skater
    - *Orbit* 1885, D. by Cambuscan
    - **Martagon** 1887, D. by Macaroni
      - *Jaquemart* 1894, D. by Chevron
      - **General Albert** 1894, D. by Skylark
      - *Woolwinder* 1904, D. by St. Simon
    - *Orion* 1888, D. by Hermit
    - *Order* 1888, D. by Galopin
    - *Orvieto* 1888, D. by Macaroni
    - **Bonavista** 1889, D. by Macaroni
      - **Cyllene** 1895, D. by Isonomy
        - *Cicero* 1902, D. by Ayrshire
        - *Polymelus* 1902, D. by Hampton
      - *Tallahassee* 1896, D. by Wellingtonia
    - *Laveno* 1892, D. by Macaroni
  - **Muncaster** 1877, D. by Macaroni
    - *St. Symphorien* 1885, D. by Kingley Vale
    - **Saraband** 1883, D. by Scottish Chief
      - *Worcester* 1890, D. by Saunterer
      - *Milford* 1890, D. by Salvator
    - *Suspender* 1889, D. by Knight of the Garter
  - *Town Moor* 1878, D. by King Tom
  - *Monarch* 1879, D. by Ivan
  - *Cambusmore* 1881, D. by Scottish Chief

Table XI. Darl. Arabian Line.

— — { *Crowberry* 1885
D. by Scottish Chief
Amphion 1886 — — — { *Sundridge* 1898
D. by Springfield
Lally 1903
D. by Galliard }
D. by Hermit }

— — { *Queen's Birthday* 1887
D. by Beauclerc
Flacon 1894
D. by Rosicrucian }

— — *Lobengula* 1894
D. by Chamant

— — { *Gulliver* 1886
D. by Hermit
War Dance 1887 — — *Perth* 1896 — — — — *King James* 1903
D. by Uncas D. by Barcaldine D. by Enterprise }

— — { *Matchmaker* 1892 — *Handicapper* 1898
D. by Plebeian D. by Beaudesert
Velasquez 1894 — — — *Admiral Breeze* 1901
D. by Macaroni D. by Isonomy }

— — *Mindig* 1895
D. by Scottish Chief
— — *Holländer* 1902
D. by Isonomy

Table XI. a. Darl. Arabian Line.

St. Serf 1887 D. by Thormanby	*Shaddock* 1893 D. by Bend Or *Sain* 1894 D. by Barcaldine *Calvely* 1895 D. by Doncaster *Ian* 1898 D. by George Frederick *Challacombe* 1902 D. by Bonavista
Fitz Simon 1888 D. by John Davis	
Friar Lubin 1888 D. by Uncas	
Simonian 1888 D. by Silvio	
Adieu 1888 D. by Doncaster	*Over Norton* 1897 D. by Rosebery
Dunure 1889 D. by Springfield	
Quidnunc 1889 D. by Blinkhoolie	
St. Damien 1889 D. by Hermit	*Chery* 1898 D. by Wellingtonia
Haut Brion 1890 D. by Brother to Strafford	
Childwick 1890 D. by Chattanooga	*Aquascutum* 1897 D. by Darby
Raeburn 1890 D. by Scottish Chief	
Petros 1890 D. by Thormanby	
Perigord 1890 D. by Strathconan	*Tiger* 1901 D. by Wellington
Simony II. 1890 D. by General Peel	
Bill of Portland 1890 D. by Sterling	*Malster* 1897 D. by Barcaldine *Prince William* 1903 D. by Hampton?
St. Hilaire 1891 D. by Hermit	
Florizel 1891 D. by Hampton	*Volodyowski* 1898 D. by Rosicrucian *Doricles* 1898 D. by Rosicrucian *Mackintosh* 1898 D. by Darby
St. Aidan 1891 D. by Hermit	
Matchbox 1891 D. by Plebeian	*Falb* 1898 D. by The Palmer *Con Amore* 1901 D. by Pasztor *Horkay* 1902 D. by Stronzian
St. Florian 1891 D. by The Palmer	*Ard Patrick* 1899 D. by Springfield
Raconteur 1892 D. by Wellingtonia	

ST. SIMON 1881 — D. by Scottish Chief

D. by King Tom

- *Soliman* 1892
  D. by Hermit
- *St. Bris* 1893
  D. by Wisdom
- **Persimmon** 1893 — — —
  D. by Hampton
  - *Cheers* 1899
    D. by Balfe
  - *Perfectionist* 1899
    D. by Morion
  - *Zinfandel* 1900
    D. by Bend Or
  - *Mead* 1900
    D. by Minting
- *Simontault* 1893
  D. by Trumpeter
- *Phöbus Apollo* 1893 — —
  D. by Barcaldine
  - *Apologue* 1902
    D. by Curassier
- *Positano* 1893 — — — —
  D. by Springfield
  - *Poseidon* 1903
    D. by Martini Henry
- **St. Frusquin** 1893 — — —
  D. by Plebeian
  - *St. Amant* 1901
    D. by Muncaster
  - *Parmenio* 1903
    D. by Orvieto
- *St. Simonmimi* 1894 — —
  D. by Barcaldine
  - *Miquel I.* 1900
    D. by Marden
- *St. Issey* 1894
  D. by Strathconan
- *Simmer* 1894
  D. by Dutch Skater
- *Collar* 1895
  D. by Bend Or
- *Manners* 1896
  D. by Wisdom
- **Desmond** 1896 — — — —
  D. by Trappist
  - *The White Knight* 1903
    D. by Buckshof
  - *Landleague* 1903
    D. by Carbine
- *Sandringham* 1896
  D. by Hampton
- *Simbach* 1896
  D. by Hampton
- *Simonside* 1896
  D. by Springfield
- *Diamond Jubilee* 1897
  D. by Hampton
- *Sidus* 1897
  D. by Hermit
- *St. Maclou* 1898
  D. by Barcaldine
- *Lauzun* 1898
  D. by Rotherhill
- *William the Third* 1898
  D. by Wisdom
- *Pietermaritzburg* 1898
  D. by Isonomy
- *Pekin* 1899
  D. by Sterling
- *Morganatic* 1899
  D. by Morgan
- *Sir Joshua* 1900
  D. by Scottish Chief
- *St. Denis* 1901
  D. by Blue Green
- *St. Oswald* 1902
  D. by Philamon
- *St. Florentin* 1902
  D. by Wisdom

Table I. Byerly Turk Line.

Table I. a.

Florizel 1786 D. by Cygnet	**Diomed** 1777 see Table I. a D. by Spectator		
	Fortunio 1779 D. by Squirrel		
	Fidget 1780 D. by Matchem		
Magnet 1770 D. by Blank			
Plunder 1771 D. by Blank			
Woodpecker 1773 D. by Cade	*Chanticleer* 1787 D. by Eclipse	*Bob Booty* 1804 D. by Bagot	
	Buzzard 1787 see Table II. D. by Dux		
Fitz Herod 1773 D. by Snap			
Justice 1774 D. by Snap	*Mentor* 1784 D. by Shakespeare		
Bordeaux 1774 D. by Cygnet			
Highflyer 1774 D. by Blank	*Rockingham* 1781 D. by Matchem		
	Delpini 1781 D. by Blank	*Seymour* 1807 D. by Javelin	
	Spadille 1784 D. by Squirrel		
	Sir Peter 1784 see Table III. D. by Snap		
	Skyscraper 1786 D. by Eclipse		
	Walnut 1786 D. by Matchem		
	St. George 1789 D. by Eclipse		
Drone 1777 D. by Blank			
Tom Tug 1777 D. by Y. Snip	*Commodore* 1793 D. by Scaramouch	*Rugantino* 1803 D. by Highflyer	*Nabocklish* 1810 D. by Master Bagot
Fortitude 1777 D. by Snap	*John Bull* 1789 D. by Eclipse	*Ardrossan* 1809 D. by Volunteer	*Jack Spigot* 1818 D. by Sorcerer
Bagot 1780 D. by Matchem	*Master Bagot* 1787 D. by Eclipse		
Phoenomenon 1780 D. by Snap	*Huby* 1788 D. by Matchem	*Driver* 1798 D. by Carbuncle	
	Stripling 1795 D. by Eclipse	*Octavian* 1807 D. by Oberon	*Antonio* 1816 D. by Evander

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Lexington 1850 D. by Sarpedon	*Optimist* 1857 D. by Glencoe	*Mars* 1867 D. by Wild Dayrell	
	Norfolk 1861 D. by Glencoe	*Emperor of Norfolk* 1885 D. by Malcolm	*Americus* 1892 D. by Glenelg
	Kingfisher 1867 D. by Kingston		
Lecompte 1850 D. by Glencoe	*Umpire* 1857 D. by Sarpedon		
Starke 1855 D. by Glencoe			

Table II. Byerly Turk Line.

BUZZARD 1787, D. by Dux

- *Quiz* 1798, D. by Matchem
  - *Roller* 1814, D. by Woodpecker
    - *Frenzy* 1830, D. by Walton
- **Castrel** 1801, D. by Alexander
  - **Bustard** 1813, D. by Shuttle
    - **Heron** 1833, D. by Orville
      - **Fisherman** 1853, D. by Sheet Anc
  - *Merlin* 1815, D. by Delpini
    - *Lamplighter* 1823, D. by Walton
      - *New Light* 1833, D. by Wanderer
      - *Phosphorus* 1834, D. by Rubens
  - **Pantaloon** 1824, D. by Peruvian
    - *Sleight of Hand* 1836, D. by Filho da Puta
    - *The Libel* 1842, D. by Camel
      - *Traducer* 1857, D. by Elis
    - **Windhound** 1847, D. by Touchstone
      - **Thormanby** 1857, D. by Muley Mo
- *Bustard* 1801, D. by Trumpator
- **Selim** 1802, D. by Alexander
  - **Sultan** 1816, D. by Ditto
    - **Glencoe** 1831, D. by Tramp
      - **Vandal** 1850, D. by Tranby
    - *Beiram* 1829, D. by Stamford
    - *Ishmael* 1830, D. by Phantom
      - *Burgundy* 1843, D. by Drone
    - *Beiram* 1829, D. by Stamford
    - **Bay Middleton** 1833, D. by Phantom
      - *Farintosh* 1840, D. by Rubens
      - *Cowl* 1842, D. by Priam
      - **The Flying Dutc** 1846, D. by Sandbeck
      - *Andover* 1851, D. by Defence
      - *Hermit* 1851, D. by Touchston
    - *Ibrahim* 1832, D. by Phantom
    - *Jereed* 1834, D. by Comus
  - **Langar** 1817, D. by Walton
    - *Elis* 1833, D. by Sir Oliver
    - *Epirus* 1834, D. by Sir Oliver
      - *Pyrrhus I.* 1843, D. by Defence
      - *Ephesus* 1848, D. by Defence
- *Rubens* 1805, D. by Alexander
  - *Teniers* 1816, D. by Highland Fling
    - *Snyders* 1833, D. by Thunderbolt
      - *Rostrum* 1849, D. by Malek Ade
      - *Lightning* 1852, D. by Y. Whaleb

Angler 1862 — — — — *Robinson Crusoe* 1873
D. by Melbourne — D. by Stockwell

Maribyrnong 1863 — — *Richmond* 1872 — — *The Admiral* 1887 — — *The Victory* 1898
D. by Fl. Dutchman — D. by The Premier — D. by Countryman — D. by Henchman

Sir Modred 1877
D. by Cambuscan
Table IV.

Virgil 1864 — — — — **Hindoo** 1878 — — — — **Hannover** 1884 — — — *Hamburg* 1895 — — — *Burgomaster* 1903
D. by Yorkshire — D. by Lexington — D. by Bonnie Scotland — D. by Fellowcraft — D. by Riley

Ellington 1853
D. by Lanercost

Amsterdam 1854 — — *Schiedam* 1865
D. by Elis — D. by Heron

Ignoramus 1854
D. by The Little Known

Amsterdam 1855
D. by Idle Boy (by Satan)

Cape Flyaway 1857
D. by Melbourne

Dollar 1860 — — — — {
- **Androcles** 1870 — — — **Cambyse** 1884 — — — {
  - *Callistrate* 1890, D. by Mars
  - *Gardefeu* 1895, D. by Bruce
  - *Arbaces* 1897, D. by D'Estournel
  - *Codoman* 1897, D. by The Bard
  }
  D. by Light or Serious — D. by Plutus
- *Salvator* 1872, D. by Ion
- *St. Cyr* 1872 — — — — *Pastisson* 1890
  D. by Ion — D. by Marksman
- *Fontainebleau* 1874 — *Phlegeton* 1886
  D. by Ion — D. by Plutus
- **Patriarche** 1874 — — **Lutin** 1891
  D. by Birdcatcher — D. by Don Carlos
- *Vignemale* 1876, D. by The Baron
- *Prologue* 1876, D. by Gladiateur
- *Saumur* 1878 — — — — *Clamart* 1888
  D. by Jon — D. by Prince Charlie
- *The Condor* 1882, D. by The Nabob
- **Upas** 1883 — — — — {
  - **Omnium II.** 1892 — — {
    - *Arizona* 1899, D. by Melton
    - *Kizil Kourgan* 1899, D. by Viligant
    }
    D. by Wellingtonia
  - *Elf* 1893, D. by Adventurer
  }
  D. by Skirmisher
- *Bocage* 1885 — — — — *Roitelet* 1892
  D. by Chattanooga — D. by Mars
- *Dauphin* 1885, D. by Father Thames
}
D. by Slane

Massi Nissa 1866
D. by Ion

Dutch Skater 1866 — *Insulaire* 1875
D. by Gladiator — D. by Beadsman

Table III. Byerly Turk Line.

- **SIR PETER 1784** D. by Snap
  - **Stamford 1794** D. by Eclipse
    - *Viscount* 1809 D. by Bordeaux
    - *Blackamoor* 1811 by Stamford
  - *Sir Solomon* 1796 D. by Florizel
  - **Haphazard 1797** D. by Eclipse
    - *X. Y. Z.* 1808 D. by Spadille
    - **Filho da Puta** 1812 D. by Waxy
      - *Hedgeford* 1825 D. by Orville
        - *Denmark* 1839 D. by Aratus (Found. Sire of Amer. Saddle horse)
      - *Giovanni* 1828 D. by Don Juan
      - *Colwick* 1828 D. by Sir Oliver
    - *Figaro* 1819 D. by Selim
  - **Walton 1799** D. by Dungannon
    - *Phantom* 1808 D. by Whiskey
      - ? *Taurus* 1826 D. by Soothsayer
        - *John o'Gaunt* 1838 D. by Partisan
        - *Turnus* 1846 D. by Defence
    - *Rainbow* 1808 D. by Brush
    - **Partisan** 1811 see Table V. D. by Pot8os
    - *Waterloo* 1814 D. by Trumpator
    - *St. Patrick* 1817 D. by Dick Andrews
      - *St. Francis* 1835 D. by Scud
  - *Ditto* 1800 D. by Dungannon
  - *Sir Oliver* 1800 D. by Diomed
  - **Sir Paul 1802** D. by Tandem
    - **Paulowitz** 1813 D. by Highflyer
      - **Cain** 1822 D. by Paynator
        - **Ion** 1835 D. by Edmund
          - *Tadmor* 1846 D. by Sultan
          - **Wild Dayrell** 1852 see Tab. VI. D. by Bay Middleton
  - *Cardinal York* 1804 D. by Phoenomenon

Table IV. Byerly Turk Line.

- **THORMANBY** 1857, D. by Muley Moloch
  - **Plaudit** 1864, D. by Springy Jack
    - *Balfe* 1872, D. by Weatherbit
      - *The Prince* 1880, D. by King Tom
  - *Pathfinder* 1864, D. by Red Deer
  - *Sunstroke* 1865, D. by Bay Middleton
  - *Normanby* 1867, D. by Stockwell
  - *Merry Sunshine* 1870, D. by Chanticleer
  - *Thuringian Prince* 1871, D. by Surplice
    - *Bird of Freedom* 1882, D. by Arthur Wellesley
  - *Tomahawk* 1871, D. by Stockwell
  - **Atlantic** 1871, D. by Wild Dayrell
    - **Le Sancy** 1884, D. by Strathconan
      - **Le Sagittaire** 1892, D. by Doncaster
        - *Beliane* 1899, D. by Saxifrage
        - *Maintenon* 1903, D. by Marden
      - *Le Justicier* 1892, D. by Parmesan
      - *Palmiste* 1894, D. by Perplexe
      - *Chambertain* 1894, D. by Stracchino
      - *Le Samaritain* 1895, D. by Doncaster
    - *Fitz Roya* 1887, D. by Perplexe
    - *Miroir de Portugal* 1888, D. by Strathconan
    - *Le Capricorne* 1888, D. by Doncaster
  - **Charibert** 1876, D. by Saunterer
    - *Hagen* 1897, D. by Isonomy

Table V. Byerly Turk Line.

- **PARTISAN** 1811
  D. by Pot8os
  - *Mameluke* 1824
    D. by Stamford
  - **Venison** 1833
    D. by Smolensko
    - *Alarm* 1842
      D. by Defence
      - *Panic* 1858
        D. by Melbourne
      - *Peon* 1861
        D. by Annandale
    - *Ugly Buck* 1841
      D. by Plenipotentiary
    - **Kingston** 1849
      D. by Slane
      - *Caractacus* 1859
        D. by Defence
      - *Blue Mantle* 1860
        D. by Paragone
      - *King John* 1861
        D. by Clarion
      - *Ely* 1861
        D. by Melbourne
    - *Buckthorn* 1849
      D. by Emilius
  - **Gladiator** 1833
    D. by Moses
    - **Sweetmeat** 1842 see Table VII.
      D. by Starch or Voltaire
    - **Fitz Gladiator** 1850 see Table VIII.
      D. by Reveller
    - *Napier* 1840
      D. by Tramp
      - *Neville* 1851
        D. by Sandbeck
    - **Ventre St. Gris** 1855
      D. by Y. Emilius
      - *Peut Etre* 1871
        D. by Nunnykirk or The Cossack
        - *Poulet* 1877
          D. by Chattanooga
  - **Glaucus** 1830
    D. by Selim
    - **The Nob** 1838
      D. by Emilius
      - **The Nabob** 1849
        D. by Camel
        - *Nutbourne* 1857
          D. by The Merry Monarch
        - **Vermouth** 1861
          D. by The Baron
          - *Vigilant* 1874
            D. by Saunterer
            - *Veronius* 1891
              D. by Plutus
          - *Clotaire* 1868
            D. by Royal Quand Même
          - **Perplexe** 1872
            D. by Sting
            - *Palais Royal* 1880
              D. by King Tom
              - *Fourire* 1896
                D. by Energie
            - *Sycomore* 1883
              D. by King Tom
            - *Fra Angelico* 1889
              D. by Doncaster
            - *Ragotsky* 1890
              D. by Kisber
          - *Boiard* 1870
            D. by De Clare
          - *Einsiedler* 1868
            D. by Orlando
        - *Suzerain* 1865
          D. by Gameboy
        - *Bois Roussel* 1861
          D. by Sting

Table VI. Byerly Turk Line.

- **WILD DAYRELL 1852**, D. by Bay Middleton
  - **Buccaneer 1857**, D. by Little Red Rover
    - *Paul Jones* 1865, D. by Chanticleer
    - **See Saw 1865**, D. by Brocket
      - *Discord* 1876, D. by Cathedral
      - *Bruce* 1879, D. by Stockwell
        - *St. Tropez* 1890, D. by Mortemer
      - *Little Duck* 1881, D. by Rataplan
        - *Champaubert* 1893, D. by Carnival
      - *Ocean Wave* 1883, D. by Stockwell
      - **Lovedone 1883**, D. by The Earl
        - **Dinna Forget 1892**, D. by Chippendale
          - *Dinneford* 1902, D. by Arbitrator
      - *Jack o'Lantern* 1884, D. by Trumpeter
    - *Cadet* 1867, D. by Orlando
    - *Triumph* 1867, D. by Alert
      - *Triumph* 1886, D. by Blinkhoolie
    - **Flibustier 1867**, D. by Stockwell
      - **Trachenberg 1879**, D. by Orlando
        - **Hannibal 1891**, D. by Hermit
          - *Fels* 1903, D. by St. Simon
    - *Y. Buccaneer* 1870, D. by Orlando
    - *Gamecock* 1870, D. by Chanticleer
    - **Waisenknabe 1872**, D. by Stockwell
      - **Stronzian 1881**, D. by Bois Roussel
        - *Aspirant* 1887, D. by Wenlock
          - *Slusohr* 1895, D. by Hermit
      - *Lehetetlen* 1879, D. by Bois Roussel
      - *Bogdany* 1894, D. by Gunnersbury
    - *Remeny* 1873, D. by Pyrrhus I.
    - *Good Hope* 1873, D. by King Tom
    - **Kisber 1873**, D. by Rataplan
      - *Crafton* 1882, D. by North Lincoln
        - *Archer* 1889, D. by Petrarch
      - *Arcadian* 1883, D. by Macaroni
      - *Realist* 1890, D. by Rosicrucian
      - *Ausmärker* 1891, D. by Isonomy
      - *Trollhetta* 1893, D. by King Lud
      - **Sperber's Bruder** 1895, D. by Rosicrucian
    - *Nil Desperandum* 1875, D. by Adventurer
    - *Kisber öcscse* 1877, D. by Rataplan
      - *Buzgo* 1882, D. by Ely
    - *Elemer* 1877, D. by Blair Athol
    - *Balvany* 1878, D. by Newminster
      - *Botond* 1888, D. by Verneuil
        - *Carrasco* 1898, D. by Shallow
    - *Vederemo* 1878, D. by Compromise
    - *Vinea* 1881, D. by Compromise
    - *Fenek* 1883, D. by Y. Melbourne
    - **Talpra Magyar 1885**, D. by Cambuscan
      - *Tokio* 1892, D. by Gunnersbury
  - *Wild Oats* 1866, D. by Harkaway
    - *Gozo* 1882, D. by Oxford
  - **The Rake 1864**, D. by Birdcatcher
    - **Pepper and Salt** 1882, D. by Oxford
      - *Grey Leg* 1861, D. by Bend Or
  - *Allbrook* 1866, D. by Daniel o'Rourke
    - *Oroszvar* 1875, D. by St. Albans
  - *Idus* 1867, D. by John o'Gaunt
    - *Vasistas* 1896, D. by Vermouth
  - *Gay Dayrell* 1867, D. by King Tom

Table VII. Byerly Turk Line.

Table VIII. Byerly Turk Line.

FITZ GLADIATOR 1850
D. by Reveller

- **Orphelin** 1859
  D. by Sting
  - *Monseigneur* 1867
    D. by The Provost
  - *Faublas* 1869
    D. by Orlando
    - *Soukaras* 1840
      D. by Dollar
  - *Revigny* 1869
    D. by Wild Dayrell
  - *Montargis* 1870
    D. by Wild Dayrell
- *Gontran* 1862
  D. by Lionbliou
- **Compiegne** 1858
  D. by The Provost
  - **Mortemer** 1865
    D. by The Baron or Nuncio
    - *St. Christophe* 1874
      D. by Ethelbert
    - **Chamant** 1874
      D. by Ambrose
      - *Weltmann* 1881
        D. by Savernake
      - **Potrimpos** 1883
        D. by Beadsman
        - *Birkhahn* 1890
          D. by Rustic
      - *Hartenfels* 1883
        D. by Bois Roussel
      - *Pumpernickel* 1884
        D. by Beadsman
        - *Flunkermichel* 1894
          D. by Champagne
      - *Hortari* 1885
        D. by Bois Roussel
      - *Mirmidone* 1888
        D. by Muscovite
      - *Peter* 1888
        D. by Brown Bread
      - *Dorn* 1889
        D. by Monseigneur
      - **Saphir** 1894
        D. by Wisdom
        - *Desir* 1904
          D. by Bend Or
      - **Habenichts** 1895
        D. by Flibustier
        - ? *Pathos* 1901
          D. by Springfield
      - *Vollmond* 1895
        D. by Flibustier
      - *Pomp* 1897
        D. by Springfield
      - *Letzter Mohicaner* 1899
        D. by St. Simon
    - *Verneuil* 1874
      D. by Stockwell
- *Ferragus* 1864
  D. by Ion
- *Debut* 1861
  D. by Caravan
- **Vertugadin** 1862
  D. by The Baron
  - **Saxifrage** 1872
    D. by Annandale
    - *Alger* 1883
      D. by Trocadero
    - *Artois* 1883
      D. by Lanercost
    - *Monarque* 1884
      D. by Ruy Blas
    - *Pourtant* 1886
      D. by Trocadero
    - *Mirabeau* 1887
      D. by Ruy Blas
- *Montagnard* 1861
  D. by Sir Hercules

Table I. Godolphin Arabian Line.

GODOLPHIN ARABIAN 1724

- *Lath* 1732, D. by Bald Galloway
- **Cade** 1734, D. by Bald Galloway
  - *Trunnion* 1747, D. by Partner
  - *Y. Cade* 1747 (Foundation sire of the coach horses), D. by Partner
  - *Changeling* 1747, D. by Partner
    - *Le Sang* 1759, D. by Whitenose
  - **Matchem** 1748, D. by Partner
    - *Turf* 1760, D. by Ancaster Starling
    - *Dux* 1761, D. by Whitenose
    - *Chymist* 1765, D. by Whitenose
    - *Pantaloon* 1767, D. by Snap
    - **Conductor** 1767, D. by Snap
      - *Imperator* 1776, D. by Herod
        - *Pipator* 1786, D. by Squirrl…
      - **Trumpator** 1782, D. by Squirrel
        - **Paynator** 179…, D. by Mark Anthony
        - **Sorcerer** 179…, D. by Diom…
    - *Alfred* 1770, D. by Snap
    - *Magnum Bonum* 1773, D. by Swift
    - *Espersykes* 1775, D. by Gower Stallion
  - *Sportsman* 1753, D. by Whitenose
  - *Hero* 1753, D. by Spinner
  - *Wildair* 1753, D. by Steady
- *Janus* 1738, D. by Bartl. Childers
  - *Janus* 1746, D. by Fox
- *Dormouse* 1738, D. by Partner
  - *Dorimont* 1758, D. by Whitefoot
- **Regulus** 1739, D. by Bald Galloway
  - *South* 1750, D. by Soreheels
  - *Careless* 1751, D. by Heneage's Whitenose
  - *Fearnought* 1755, D. by H.'s Whitenose
    - *Symme's Wildair* 1770, D. by Jolly Roger
  - *Jalap* 1758 (Foundation sire of the Cleveland Bays), D. by Blacklegs
  - *Morwick Ball* 1762, D. by Traveller
- *Gower Stallion* 1740, D. by Whitefoot
  - *Sweepstakes* 1749, D. by Partner
- *Babraham* 1740, D. by Blind Horse
  - *Cardinal Puff* 1760, D. by Snip
- **Blank** 1740, D. by Bartl. Childers
  - *Pacolet* 1763, D. by Crab
  - *Paymaster* 1766, D. by Snap
    - *Paragon* 1783, D. by Herod
- *Bajazet* 1740, D. by Whitefoot
- *Old England* 1741, D. by Bartl. Childers
  - *Amaranthus* 1766, D. by Second
- **Cripple** 1750, D. by Crab
  - *Gimcrack* 1760, D. by Grisewood's Partner
    - *Clockfast* 1774, D. by Regulus
    - *Medley* 1776, D. by Snap
      - *Grey Diomed* 1786, D. by Sloe
  - *Tantrum* 1760, D. by Hampton Court Childers
- *Matchless* 1754, D. by Soreheels

Remembrancer 1800 D. by Eclipse	*Recordon* 1807 D. by Precipitate			
Dr. Syntax 1811 D. by Beningbrough	*The Doctor* 1839 D. by Lottery			
Thunderbolt 1806 D. by Mentor				
Granicus 1807 D. by Alexander	*Scrapall* 1812 D. by Whiskey			
Truffle 1808 D. by Buzzard				
Soothsayer 1808 D. by Delpini	*Tiresias* 1816 D. by Waxy *Helenus* 1821 D. by Gohanna			
Comus 1809 D. by Sir Peter	*Reveller* 1815 D. by Beningbrough	*Ascot* 1832 D. by Rubens	*Fernhill* 1845 D. by Elis	
	Corinthian 1819 D. by Orville			
	Humphrey Clinker 1822 D. by Clinker	*Rockingham* 1830 D. by Swordsman *Bran* 1831 D. by Oiseau **Melbourne** 1834 see Table II. D. by Cervantes		
	Grey Momus 1835 D. by Cervantes	*Ibicus* 1849 D. by Taurus		
Smolensko 1810 D. by Mentor	**Jerry** 1821 D. by Orville	*Tomboy* 1829 D. by Ardrossan	*Nutwith* 1840 D. by Comus	*Knight of Kars* 1855 D. by Glencoe
		Jeremy Diddler 1839 D. by Muley		
		Jericho 1842 D. by Selim	*The Promised Land* 1856 D. by Touchstone	
		Clearwell 1830 D. by Hambletonian		
Bourbon 1811 D. by Precipitate	*Alderman* 1822 D. by Shuttle			

Table II. God. Arabian Line.

MELBOURNE 1834 — D. by Cervantes	*Sir Tatton Sykes* 1743 D. by Margrave	
	Prime Minister 1848 — D. by Pantaloon	*Knight of the Garter* 1864 — — — — D. by Touchstone
	West Australian 1850 — D. by Touchstone	*Joskin* 1856 — — — — — — — — — D. by The Major
		The Wizard 1857 — — — — — — — D. by The Cure
		Australian 1858 — — — — — — — D. by Y. Emilius
		Solon 1861 — — — — — — — — D. by Birdcatcher
		Lelio 1862 D. by Launcelot
		Templier 1862 D. by Catherstone
		Bagdad 1862 — — — — — — — — D. by Ionian
		Ruy Blas 1864 — — — — — — — D. by Gladiator
		Eole II. 1868 D. by The Baron
	Brocket 1850 — — — — D. by Muley Moloch	*Palmerston* 1867 D. by Flying Dutchman
	Arthur Wellesley 1851— D. by Launcelot	*Mornington* 1868 D. by Orlando
		York Minster 1869 D. by Newminster
	Oulston 1852 D. by Muley Moloch	
	Illuminator 1853 D. by Emilius	
	Mentmore 1855 — — — D. by Defence	*Syrian* 1867 D. by Autocrat
	Y. Melbourne 1855 — — D. by Pantaloon	*Brother to Rapid Rhone* 1859 D. by Lanercost or Retriever
		Rapid Rhone 1860 — — — — — — D. by Lanercost or Retriever
		Brother to Strafford 1860 D. by Gameboy
		Strafford 1861 D. by Gameboy
		General Peel 1861 D. by Orlando
		The Earl 1865 — — — — — — — D. by Orlando
		Statesman 1869 D. by Orlando
		Pell Mell 1869 — — — — — — — D. by Voltigeur
		New Holland 1872 D. by Zuyder Zee
	The Peer 1855 — — — D. by Touchstone	*Darebin* 1878 — — — — — — — D. by Traducer

— — —*Przedswit* 1872 — — — — — *Abonnent* 1884
D. by Stockwell — D. by Lecturer
Padischah 1885
D. by Hermit

— — *Plebeian* 1872
D. by Autocrat

— — —*Goswin* 1864
D. by St. Nicholas

— — **Spendthrift** 1876 — — — *Kingston* 1884
D. by Lexington — D. by Victorious
Lamplighter 1889
D. by Speculum
Hastings 1893
D. by Blue Ruin

— — **Arbitrator** 1874 — — — *Kilwarlin* 1884 — — — *Ogden* 1894
D. by Musjid — D. by Lord Gough — D. by Bend Or

Philammon 1874
D. by Wild Dayrell

Barcaldine 1878 — — — **Winkfield** 1885 — — — **Winkfield's Pride** 1893 — *Finasseur* 1902
D. by Belladrum — D. by Beadsman — D. by Isonomy — D. by Clamart
Morion 1887
D. by Beadsman
Goodfellow 1887 — — — *Chaleureux* 1894
D. by Clanronald — D. by John Davis
Glitter 1887
D. by John Davis
Espoir 1889
D. by Beauclerc
Wolf's Crag 1890
D. by Lammermoor
Barbary 1891
D. by Rosicrucian
The Rush 1892
D. by See Saw
Sir Visto 1892
D. by Macaroni
Marco 1892
D. by Hermit
Barrister 1893
D. by Clanronald

— — — *Reluisant* 1882
D. by Adventurer

— — —*Mourle* 1875
D. by Sylvain

— —*Lord Glasgow* 1867
D. by Hobbie Noble

— — *Earl of Dartrey* 1872
D. by Rataplan

— —*Carlton* 1883
D. by Speculum

— — *Australian Peer* 1884 — — *Australian Star* 1896
D. by Macaroni — D. by Grandmaster